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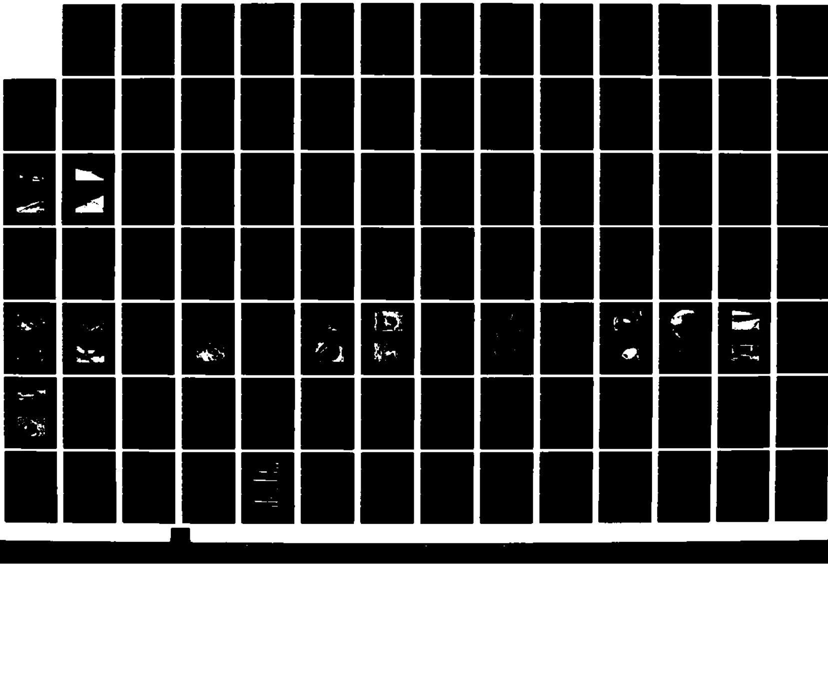

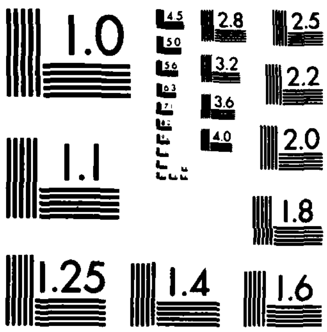

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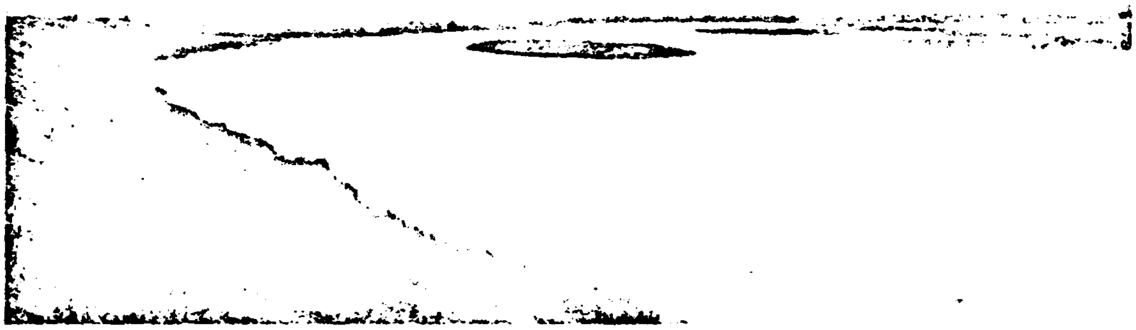
Project Report Number 15

ARCHAEOLOGICAL INVESTIGATIONS IN UPPER McNARY RESERVOIR: 1981-1982

by
Alston V. Thoms
with contributions by
Sheila J. Bobalik
Karen Dohm
Todd R. Metzger
Deborah Olson
Stephan R. Samuels



LABORATORY OF ARCHAEOLOGY AND HISTORY

Washington State University
Pullman

1983

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. A127026	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Archaeological Investigations in Upper McNary Reservoir: 1981-1982		5. TYPE OF REPORT & PERIOD COVERED Final Report
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Alston V. Thoms		8. CONTRACT OR GRANT NUMBER(s) DACW68-81-C-0120
9. PERFORMING ORGANIZATION NAME AND ADDRESS Laboratory of Archaeology and History, Washington State University, Pullman, Washington 99164-1352		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Corps of Engineers, Walla Walla District, Bldg. 602, City-County Airport, Walla Walla, WA 99362		12. REPORT DATE 1983
		13. NUMBER OF PAGES 277
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

Approved for public release; distribution unlimited

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

McNary Reservoir — late prehistoric-early historic periods
nonsite survey — fishery
type-areas — historic resources
topographic landforms — homesteads/farmsteads — mining featrues

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

A nonsite survey carried out on an eleven mile stretch of the mid-Columbia River in Washington State has revealed significant cultural remains. Given the almost continuous distribution of cultural material in the survey area, definition of site boundaries by presence/absence was regarded as arbitrary or spurious. Instead, archaeological type-areas were defined based on the variation in density of cultural materials. The type-areas were correlated with given topographic settings or landforms. Most cultural materials were

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20. probably deposited during the late prehistoric and early historic periods by people who seasonally utilized the area. It is suggested that the project area may represent an important fishery utilized as a field camp by groups whose more permanent residences were located elsewhere. Historic resources attributable to non-Native American groups also were recorded in the area. These included primarily twentieth century homesteads and farmsteads as well as mining features.

Project Report 15

ARCHAEOLOGICAL INVESTIGATIONS IN UPPER McNARY RESERVOIR: 1981-1982

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Washington State University

Pullman
1983

The archaeological investigations in the Upper McNary reservoir: 1981 - 1982 were undertaken for the U.S. Army Corps of Engineers, Walla Walla District, in fulfillment of contract number DACW68-81-C-0120. All contract information is filed at the Laboratory of Archaeology and History, Washington State University, Pullman, under coding 11F-4970-0031.

Projects Reports is a selected series disclosing the results of research in the form of final and interim reports submitted to agencies which have contracted with the Laboratory of Archaeology and History for information on cultural resources.

ACKNOWLEDGMENTS

As with any archaeological project, there are many people who deserve thanks for the time and expertise that they provided. Certainly, staff of the U.S. Army Corps, Walla Walla District are among these. Colonel Henry J. Thayer reduced the bureaucratic problems that beset any project to an absolute minimum and showed an interest in archaeology, and an understanding of it beyond that expected from anyone outside of our own profession. LeRoy Allen was instrumental in making funding available to the project and was our primary contact with the Corps personnel. John Leier also of the Walla Walla Corps office, assisted Mr. Allen and spent several days working with us during fieldwork. Additionally, Mr. Allen and Mr. Leier reviewed and approved the draft version of this report.

Our special thanks are also extended to Dr. Robert Whitlam and other members of the State Historic Preservation Office's staff. We submitted a draft copy of this report to them on short notice and they responded quickly with an informal but very useful review of the report's technical aspects.

Dr. Richard Daugherty of the Department of Anthropology at Washington State University was instrumental in making funding available to the project. He has also lent his expertise and provided constructive comments on our project. Dr. Geoffrey Gamble, chairperson of the Department of Anthropology and Dr. William Lipe, also of the Department of Anthropology at Washington State University, read a draft version of the report and offered constructive criticisms.

Dr. David Rice, of the Seattle Corps of Engineer's office, provided useful information and went out of his way to talk to us about the survey area. Through those conversations, he alerted us to the probable presence of remains from Chinese mining activities in the survey area. We also acknowledge and appreciate review of this document by David Rice and David Munsell of the Seattle District.

Fieldwork could not have been completed at the level we attempted without the considerable assistance of Nick Paglieri, Judy Thayer, Beth Miksa, Kim Simmons, and Murrel Comfort. They volunteered weeks of their time. Nick Paglieri not only spent many weeks in survey, but also offered his expertise in Plateau archaeology and his sage advice. He frequently acted as our trouble shooter, procuring necessary permits and authorizations from the Atomic Energy Commission.

The Laboratory of Archaeology and History staff have provided much needed assistance, a significant portion of which was volunteered. They have spent mornings, evenings, and sometimes weekends helping to produce the final product. Kathy Cox, Sheri Emery, Lorna Elliott, Cathy Eshleman, Dolores Lehn, and Janet Olmstead have produced the final and interim report typed copies and have been responsible for much of the administration and office work associated with the project. Miranda Warburton helped with the final copy editing. C. K. Ho has produced

our maps and their endless revisions--a task requiring considerable patience as well as skill. Bob Mierendorf and Bruce Cochran require special thanks for visiting the survey area and acting as consultants on archaeology and sedimentology and for providing constructive criticism of the project. Mierendorf deserves an additional extended thanks for his assistance in analysis and drafting.

Washington Archaeological Research Center staff provided us with photocopies of the site files for the survey area and vicinity.

Hanford Works personnel were quick to provide us with necessary permits and always polite in investigating our apparent trespasses on their sensitive areas.

Several other individuals visited us during Phase I fieldwork and/or the laboratory phase. They listened to our ideas and offered useful suggestions. Among the individuals were Dan Landis and Vera Morgan of Eastern Washington University's contract program and Steven Hackenberger of the Washington Archaeological Research Center.

Karen Dohm, Sheila Bobalik, and Todd Metzger were the primary surveyors and often unselfishly volunteered time and mental energy to complete the job. They also, with Steve Samuels and Deborah Olson, have made contributions to the final report well above and beyond the call of duty. Karen Dohm was involved primarily in the Phase I survey and report, but has provided assistance in analysis and editing for the final report, as well. Sheila Bobalik tirelessly transformed the array of field information into a coherent data set. She has also provided helpful suggestions for this report. Todd Metzger compiled the field maps, and this was a monumental task. He also assisted in the final drafting and provided continuous support and helpful suggestions.

Randall Schalk, the project's Principal Investigator, has provided sound advice and constructive criticism throughout the project. Moreover, and perhaps more importantly, he trusted us and encouraged us in our ability to carry out the project goals. He also provided the resources, in a pinch, to pull us through when it appeared we might not.

We also extend a special thanks to our families and friends who not only tolerated our poor dispositions and prolonged absences, but were a source of much appreciated encouragement.

Many individuals, some of whom undoubtedly remain unnamed, have contributed to this report. Simply stated, the report would not be as it is without their help. Nonetheless, the author and contributors together with the Principal Investigator bear the responsibility of any errors in fact and for the report's contents.

ABSTRACT

Nonsite survey on a 10.9 mile stretch of the mid-Columbia River in Benton and Franklin counties, Washington, has revealed significant cultural remains. The survey area possesses an almost continuous distribution of cultural material. Over 80% of the analyzed surface area exhibits cultural materials. These include over 50 housepits, 575 definable concentrations of fire-cracked rock, 1,500 flaked cobbles, and hundreds of other artifacts. The distribution of materials renders definition of site boundaries, by presence/absence of cultural materials, arbitrary or spurious. However, there is variation in density of cultural materials, and based on these variations, archaeological type-areas are defined. These include isolated and contiguous pit structure areas, areas with a very high density of artifacts and features, and areas with a low density of cultural materials. In all, nine type-areas have been identified, and are correlated, perhaps causally correlated, with given topographic settings or landforms. Type-areas represent different combinations of basic activities as inferred from the kinds of cultural materials. Basic activities include: residence/storage, food procurement, food processing, and food preparation. Most of the extant aboriginal cultural materials were probably deposited during the late prehistoric and early historic periods by groups of people who seasonally utilized the area. It is suggested that seasonal utilization was most intensive during the fall and directed primarily toward securing large quantities of anadromous fish. Seen in this light, the project area may represent an important fishery, utilized as a field camp by groups whose more permanent residences or winter villages were elsewhere, possibly near the confluence of the Yakima and Snake rivers with the Columbia. Historic resources attributable to non-Native American groups also are recorded in the area. These include primarily twentieth century homesteads and farmsteads as well as mining features. Evidence indicates that both "Chinese" and "White" miners operated gold placer mines in the project area from the mid-nineteenth through the early twentieth centuries. Survey data clearly demonstrate that the area has yielded and is likely to yield more important information; as such, it is recommended for inclusion on the National Register of Historic Places as a district.

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CHAPTER 1

INTRODUCTION

This report documents the work conducted in conjunction with Contract No. DACW68-81-C-0120 between the Walla Walla District of the U.S. Army Corps of Engineers and the Laboratory of Archaeology and History, Washington State University. The contract stipulates performance of an intensive archaeological survey of the Corps of Engineers' lands along the Columbia River between river miles 340 and 350 at the very upstream end of McNary Reservoir, Benton and Franklin counties, Washington.

Specifically, the "scope of work" specified the following:

> Article 1. Character and Extent of Services. The Contractor shall furnish the following work and services in accordance with Appendix "A" (herein also presented as Appendix A) which is attached to and made a part hereof:
>
> a. Necessary labor, material, and equipment to perform an archaeological survey along the Columbia River between river miles 340 and 350 at the very upstream end of the McNary Reservoir. All data generated during the survey will be put into an order acceptable for evaluation purposes. Photographic documentation and field notes in accordance with professional standards will be maintained.
>
> b. A report shall be prepared and furnished in 25 copies. The report shall include a clear statement of the research design and a description of procedures utilized to collect and evaluate information obtained. Analysis shall be included which, at minimum, shall place the data in the prehistoric record of the region. This description shall be in sufficient depth to allow for adequate professional peer review and critique of the research design as it was implemented by archival, field, and laboratory investigations and analyses. In addition, the report shall include, at a level of precision and confidence commensurate with the scope of investigation underway, the principal investigator's professional assessment of the kinds of cultural resources present or inferred to be present, an estimate of regional distributional relationships thereof, and the significance of identified properties in terms of their potential to contribute new information. Further, the report shall document the test results and provide recommendations for management purposes (U.S. Army Engineer District, Walla Walla 1981:2).

Appendix "A", referred to above, is the initial proposal to conduct the intensive survey. That proposal has been modified by a second proposal

which suggested that the work be carried out in two phases, but "scope-of-work" remained unchanged. Total funding for this project was approximately $50,000. Relevant documents are included in this report as Appendix A.

Although several reconnaissance level surveys had been conducted previously in the area, Corps' personnel determined that inventory level information necessary to make preliminary evaluations of significance was not available. This survey's primary purpose was to inventory cultural resources and recover information necessary to make a preliminary assessment of the resources' National Register eligibility.

Although Wooded Island and the adjacent west shoreline had been designated as a National Register archaeological district as a result of information gathered during the course of reconnaissance level surveys (Rice 1968a, 1968b), the District was included for survey work in the Corps' Scope-of-Work. Obviously, inclusion of Wooded Island District as part of the survey area was not necessary for purposes of National Register eligibility evaluation, but there were two important reasons for surveying that area. In the first place, it insured that the cultural resources in the District would be inventoried systematically (i.e., beyond the reconnaissance level), thereby providing useful and necessary information for management purposes. The second reason for including the District in the survey area was to insure that the resulting data would be comparable to and augment those generated for the rest of the survey area, thereby providing a more comprehensive data base for evaluation purposes.

The project was divided into two phases. Phase I included an intensive surface survey of all islands between river miles 339 and 348 and the west bank of the Columbia River between river miles 345 and 350.8. Preliminary results of the Phase I survey were summarized in an interim report (Thoms and Dohm 1982). Phase II included the survey of the remaining Corps of Engineers' lands between river miles 339.9 and 350.8, specifically: (1) the east bank of the Columbia River between river miles 339.9 and 350.8; (2) the west bank between river miles 339.9 and 345; and, (3) Wooded Island and an unnamed island we referred to as Tear Drop Island.

The entire area surveyed is composed of eight islands and about 35 km (21.8 miles) of shoreline (16 km or 10.9 miles on each side). Islands range in size from 40 by 800 m to 300 by 4,000 m. The width of the shoreline portion of the survey ranges from 30 to about 200 m. In many cases we did not know the exact boundary limits of the Corps of Engineers' lands away from the river. When boundary markers could not be located we surveyed to the highest land surface in proximity to the river margin. We had access to a number of "official" maps and aerial photographs at different times during the project. Among other things, they designated the location of river miles within the project area. Since the river miles defined the survey area, their precise location was crucial. Unfortunately, each map illustrated the same river mile in different places and we had access to the maps at different times. The end result was that we surveyed almost 11 miles of each shoreline, not

the 10 miles stipulated in the contract. It is estimated that the total area surveyed represents approximately 660 ha (1,643 acres).

Phase II also included description and analysis of the results of the entire survey, recommendations concerning National Register eligibility, and recommendations for the management of the area's cultural resources. Randall Schalk served as principal investigator and was responsible for the overall project. Alston Thoms was the project director, responsible for implementation of all aspects of the project and for preparation of the final report.

Phase I fieldwork was carried out between September and November of 1981 by Alston Thoms and Karen Dohm who served as the project archaeologist. They were assisted by Nick Paglieri, Judy Thayer, Beth Miksa, Kim Simmons, Murrel Comfort, and John Leier. Approximately 100 total person-days were spent in the field during Phase I. Thoms and Dohm, with advice and assistance from Randall Schalk, spent about 30 person-days conducting preliminary analysis and preparing the Phase I interim report.

Phase II fieldwork was carried out in February and July of 1982 by project archaeologists Sheila Bobalik and Todd Metzger. They were assisted by Alston Thoms, Nick Paglieri, Kim Simmons, and John Leier. About 50 person-days were spent in the field during Phase II. Analysis and final report preparation was carried out by Alston Thoms, Sheila Bobalik, Karen Dohm, Todd Metzger, Deborah Olson, Steve Samuels, and Randall Schalk, who served primarily in the capacity of an advisor. Authorship of some chapters and subchapters is indicated in the table of contents; unless otherwise noted chapters and subchapters are written by Alston Thoms.

CHAPTER 2

GENERAL BACKGROUND

The basic background information relating to the project area's natural and cultural settings as well as a summary of previous investigations is presented in this chapter. It is by no means exhaustive. We have elected not to provide detailed discussions of regional prehistory, ethnohistory, history, and the environment, as these are readily available elsewhere and their inclusion would be redundant. The reader is referred to the following sources for more detailed discussions: (1) A Cultural Resources Overview of Bonneville Power Administration's Mid-Columbia Project, Central Washington (Galm et al. 1981); (2) Cultural Resources Assessment of the Hanford Reach of the Columbia River, State of Washington (Rice and Chavez 1980); (3) The Cultural Sequence of the Southern Columbia Plateau (Schalk 1980b); (4) Ethnohistory and Ethnography of the Priest Rapids Reservoir (Smith 1982); (5) Tales of Richland, White Bluffs and Hanford 1805-1943: Before the Atomic Reserve (Parker 1979); and (6) McNary Final Environmental Impact Statement (U.S. Army Corps of Engineers 1976).

Geographic and Environmental Setting

The study area lies in south-central Washington along the middle portion of the Columbia River (Figure 1). It is situated within the Pasco Basin which centers upon the confluences of the Yakima and Snake rivers with the Columbia. Within the Columbia Plateau, this region is notable for its lack of relief, low elevation (less than 500 feet above a.s.l.), low precipitation (less than 8 inches annually), long growing season (200 days), and formerly abundant runs of anadromous fish. Modern vegetation is broadly characterized as shrub-steppe: the *Artemisia tridentata/Agropyron spicatum* association (Franklin and Dyrness 1973). Although it seems likely that the modern vegetation is strongly conditioned by over-grazing and perhaps the suppression of range fires historically, there have apparently been no palynological studies done in this region (Bartholomew 1982) so vegetation history for this specific region is not well known.

Virtually all surface water within the Pasco Basin occurs as the unearned runoff of the Columbia or Snake and within the 11 mile reach of the study area there are no permanent water tributaries. Insofar as water may be assumed to be an especially important determinant of human settlement location in such a dry environment, one would anticipate that aboriginal land use would have been somewhat more "tethered" in this region than in surrounding areas of the Plateau.

The gradient of the Columbia through this reach is unusually gradual. The predam Columbia dropped an average of 2.4 feet per mile from the International Boundary to the foot of the Priest Rapids. From

the lower end of Priest Rapids to the mouth of the Snake River, the gradient flattened out to an average of 1.1 feet drop in elevation per mile. Below the mouth of the Snake, there was a slight increase in gradient again. Associated with this stretch of reduced stream gradient are the numerous channel islands that are such a distinctive feature of this reach of the Columbia and our study area (see Figure 1).

Plant resources in this region are quite poorly known but are presumed to have been generally unproductive with regard to human utilization as food sources. The xeric conditions are not favorable to the production of camas (Statham 1975) or, we suspect, other root crops of importance elsewhere in the Plateau. Based upon broad climatic similarities of this region to certain areas of the Great Basin one might speculate that seed resources may have been of greater importance than roots. Much additional published research on the biogeography of various plant resources would be of considerable value. The archaeological distribution of tools associated with the processing of plant resources (e.g., basket hopper mortars) might also offer a rewarding line of investigation in future studies. Among the plants in the study area that may have been utilized as food sources to some extent are various bunch grasses that produce relatively large seeds, prickly pear, mule-ears, cattail, and sedges.

Despite the relatively long growing season of this region, precipitation operates as a limiting factor on plant growth. For this reason, the carrying capacity or grazing potential for ungulates is not especially good in this region today and probably was not at times in the past when similar climatic conditions obtained. Unlike the forest edge areas around the margins of the Columbia Basin where deer and elk are migratory between summer and winter ranges, the milder conditions and low relief of this region result in year round use of the area by limited numbers of deer (Pacific Northwest River Basins Commission 1971:Figure 11). Up to the past century, antelope were also an important component of the mammalian fauna in this region (Osborne 1953; Cleveland 1976). Other large mammals such as elk and bison are well documented in archaeological sites from this general area (Osborne 1953; Harkins 1978) but there is good reason to believe that these would have been present mainly under moister climatic conditions than prevail here today. It should be recalled that rather minor increases in effective precipitation would probably have profound influences on distributions of some of these game species.

Studies of past distribution and abundance of the various anadromous fish species indigenous to the Columbia Basin have been summarized by Fulton (1968, 1970). With reference to aboriginal subsistence, there are recent discussions of anadromous fish resources of the Lower Snake, Deschutes-Umatilla, Priest Rapids, and Rocky Reach regions of the Columbia Plateau (Schalk 1978, 1980a, 1982; Schalk and Mierendorf n.d.). Between early April and late October or a period of about 7 months, a series of migrations of sockeye salmon (*Oncorhynchus nerka*), coho salmon (*O. kisutch*), chinook salmon (*O. tshawytscha*), steelhead trout (*Salmo gairdneri*), and other species of lesser importance passed through this reach of the Columbia. We should also

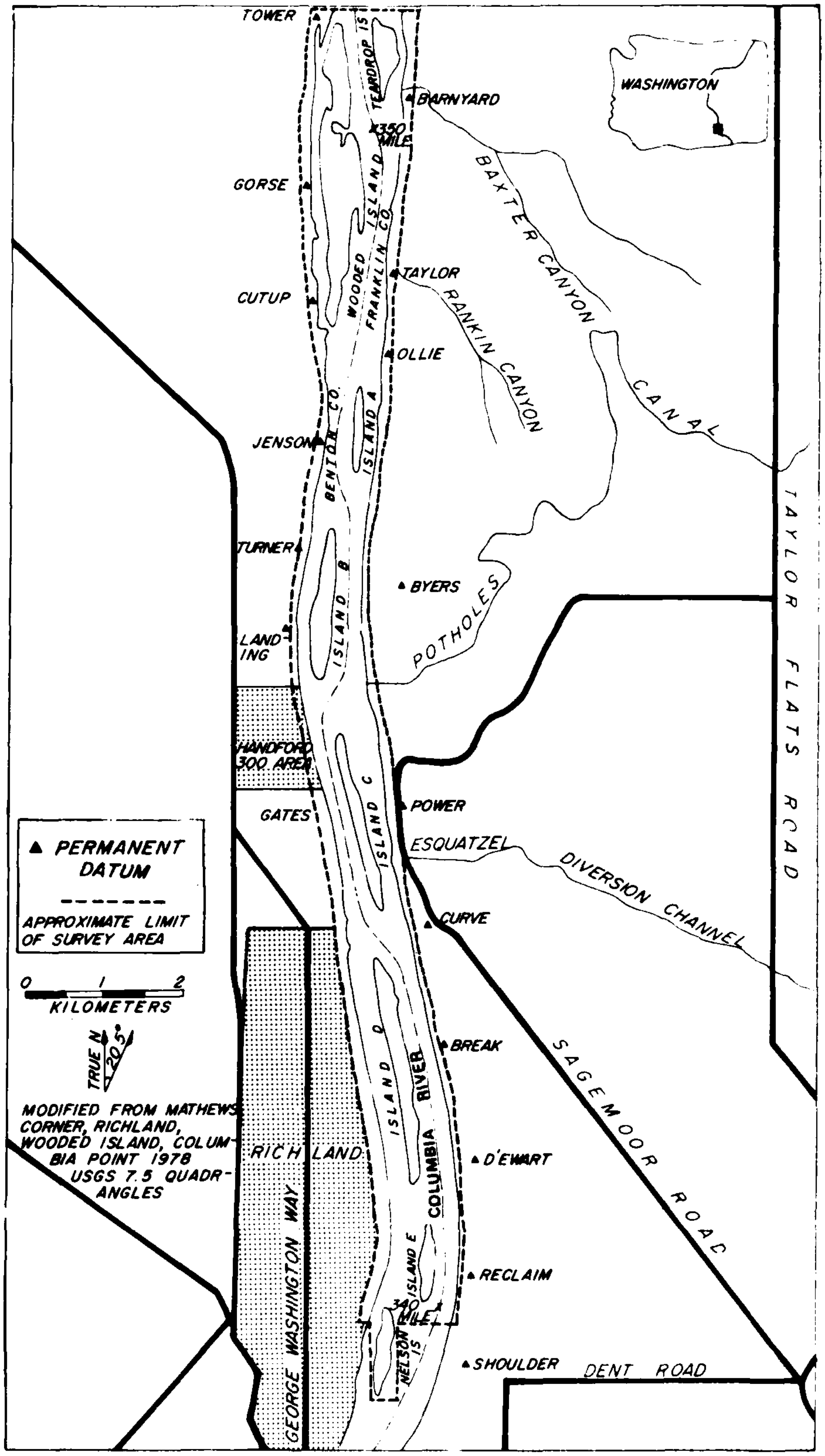


Figure 1. Map illustrating the location of the study area and major topographic features.

note that freshwater mussels are widespread throughout mid-Columbia region and their remains are common occurrences at archaeological sites.

The chinook salmon is of special interest to the present study not only because of its probable quantitative importance in this region prehistorically but because this reach of the Columbia was a major spawning ground for the fall run chinook salmon. Unlike the spring and summer runs of chinook salmon and other anadromous species that spawn in various tributaries to the Columbia, the fall run chinook utilized the main-stem of the Columbia as spawning habitat (Fulton 1968, 1970). The reach between Richland and Priest Rapids constitutes the last major spawning area that remains today in the Columbia Plateau for the fall run chinook (Allen 1977:24-25).

This run of fish has three characteristics that make it especially attractive as a target for delayed consumption by means of drying and/or smoking (Schalk 1982:12). First, it arrives near the end of the growing season when temperatures are falling. Exploitation of this run for storage purposes would have substantially reduced the risks of spoilage as a consequence of lowered temperature as well as a shorter interval between drying and consumption. Secondly, fall run chinook have considerably less body fat or oil content--a factor which probably made drying much easier even though caloric content would have been lower than for the "fatter" runs. Thirdly, because the study area is prime spawning habitat for fall chinook, large numbers of these fish would have been spatially and temporally concentrated here. These conditions would have been optimal for the application of mass harvest techniques such as the seine or drift-net which, in turn, are ideally suited to procuring large quantities of fish in short periods of time to be processed for immediate as well as delayed consumption.

The presence of numerous channel islands in the study area probably would have enhanced the potential for intercepting migrating fish. The same could be said for the extensive gravel bars along the shoreline. Some of the gravel bars contain extensive large cobble and boulder fields that extend well into the channel. In their ascent upstream, migrating fish tend to seek out the course of least resistance to minimize their energy expenditures. In passing through a reach with channel islands, one would suspect that fish would typically swim up the side of the islands with the slowest current and, in such locations, would have been taken with greater ease than would otherwise be possible without the split channel.

To summarize what has been suggested with respect to the food resources available in this region, it has been argued that plant and ungulate foods would have been rather unproductive relative to the better watered and higher elevation settings elsewhere in the Columbia Basin. Fish resources, however, and especially the fall chinook salmon should have been of considerable importance relative to surrounding regions and relative to the plant and mammal resources of this region.

Landforms

Dominant landforms within the survey area include the mid-channel islands, White Bluffs, high Pleistocene gravel terraces, Taylor Flats, extensive sand dunes, some of which are still active, and relatively low, young river terraces. The river terraces we refer to consist of sandy sediments and may well be channel marginal bars. Our assessment of their relatively young age is based upon field observations. The critical factors indicating a young age are the absence of well developed modern soils and paleosols. Furthermore, fluvial deposition is apparently rapid (Bruce Cochran and Robert Mierendorf 1982: personal communication). We expect that the soldered-seam tin cans, purple glass fragments, and other historic materials exposed in cutbanks about 10-30 cm beneath the surface were deposited during and after the 1894 flood. Assuming a relatively constant rate of deposition, most of the sandy alluvium constituting the low terraces or channel marginal bars is likely to be less than 2,000 years old and probably represents an even shorter period of time. This does not mean, however, that older sediments are not present behind or below the exposed cutbanks or a greater distance from the river margin.

For purposes of the project a simple classification scheme was utilized to characterize the entire study area in terms of landforms. During the course of fieldwork it became apparent that different kinds of landforms are readily recognizable and frequently manifest different densities and/or kinds of artifacts and features. One of our objectives was to better understand the relationships between the kinds of topographic features and cultural materials. It was thus necessary to monitor the distribution of cultural materials in terms of the landforms in or on which they were discovered. The landform terminology we employed is project specific, intended to be descriptive, and does not always specify geomorphic relationships precisely.

In our system individual islands tend to exhibit three different kinds of surfaces or zones: beaches, alluvial and/or aeolian sands, and low flats. The southern parts and sometimes the central parts of islands characteristically have a relatively consolidated sandy unit we term the alluvial/aeolian sand zone. It occupies the higher ground or mid-portion of the island. Vegetation is usually dense in this zone and consists primarily of grasses and rabbitbrush. The term beach refers to the shoreline of the islands. As a rule these beach zones lack vegetation and the sediments range in size from sands to cobbles following the Wentworth size classification (Folk 1974:25). The beaches on the northern parts of islands generally consist of pebbles and cobbles. Those on the southern portions exhibit considerable amounts of sand with the pebbles and cobbles and in some areas the sediments are comprised entirely of sand size particles.

The third zone, which we term the low flats occupies either the area between the beaches where there is no alluvial/aeolian zone or between the alluvial/aeolian sands and the beaches. Typically, it slopes gently away from the island's center. Vegetation on the low flat

in the southern part of the islands includes willows, small cottonwoods, and sparse bunch grasses. The northern low flats either lack a plant cover or have significantly less vegetation than the southern ends. Low flat sediments on the southern part of the islands tend to consist of sands, pebbles, and cobbles. Linear deposits of sand, possibly representing a swash zone, low levee, or small channel bar, frequently cover the pebbles and cobbles along the interface between the beach and low terrace zones. Northern portions of the islands consist of pebbles and cobbles with lesser amounts of sand.

Most islands exhibit the beach, low flat, and alluvial/aeolian sand zones. Island A and Nelson Island (Figure 1), however, have only the beach and low flat zones. Two landforms, each consisting of several zones, characterize the islands. We use the term beach and high alluvial flat (BAF) to designate the island landform represented by a beach-alluvial/aeolian sand-beach cross section (Figure 2). The term beach and low flat (BLF) designates the island landform represented by a beach-low flat-beach cross section (Figure 3). A portion of the BAF landform on Wooded Island is illustrated in Figure 4.

The shoreline also has characteristic zones that can be combined to form landforms that represent cross sections from the beaches to the highest zones in the survey area. There are four of these higher zones (high flats, sand dunes, White Bluffs, and high gravel terraces) and each is used to designate a landform. The lower elevation zones are similar in all situations although their widths vary. As with the islands, we employed the term beach to denote that portion of the shoreline regularly subjected to wave action. The beach is generally devoid of vegetation and sediments are very poorly sorted, ranging in size from sands to boulders.

Low flat refers to the zone between the beach and the higher zones. The low flat tends to slope gently toward the river; typically sediments are poorly sorted, ranging from sands to boulders. Areas composed entirely of pebble to boulder size sediments or sands are common. Vegetation ranges from sparse grasses and forbes to dense stands of willows, horsetail, cockle-burrs, and grasses. Slump is defined here as the interface between the dunes and the low flat. It customarily slopes steeply to the low flat; sediments are composed entirely of sand size particles, and vegetation, where present, consists primarily of grasses. Cutbank/slump refers to the interface between the high flat and the low flat zones. Cutbanks are often vertical and range in thickness from less than 1 m up to about 4 m. Slump also occurs along the cutbank and is seldom more than a few meters wide; it slopes abruptly to the low flat. Sediments are sandy and vegetation cover, on the slump, is usually present and varies from sparse grasses to dense grasses and forbes. Colluvial slope refers to the steep interface between the highest zones--White Bluffs and high gravel terrace--and the narrow high flat zone along the east shore. The colluvial slope zone is sparsely vegetated and sediments range from sands to cobbles.

Sand dune zones occur only along the west shore. They are hummocky and usually covered with some vegetation including grasses,

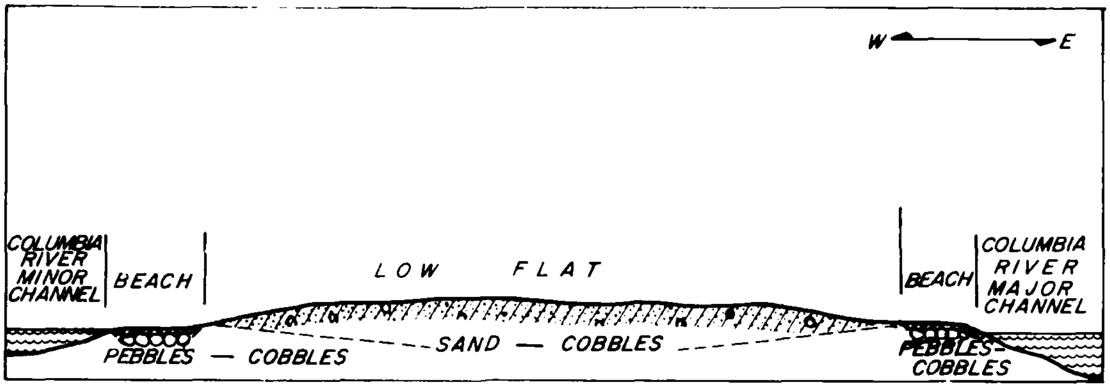


Figure 2. Schematic cross section of the beach and alluvial/aeolian sands (BAF) landform characteristic of most islands.

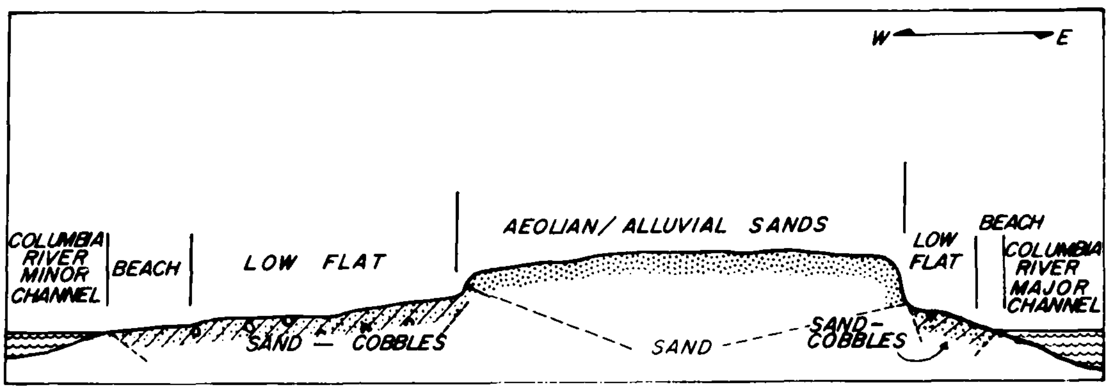


Figure 3. Schematic cross section of the beach and low flat (BLF) landform characteristic of islands.

rabbit brush, and frequently dense stands of prickly pear cactus. Some of the dunes are active and "blow-outs" are common. Sediments consist only of sand size particles.

The term high flat primarily refers to the relatively flat zones, that are immediately above the low flat and extend for some distance. This zone occurs along both shores. In these cases, the high flat probably has an alluvial origin much like that of the islands. Sediments consist of sand size particles. Deposits resulting from the 1894 and/or 1948 floods, typified by their high content of organic debris, generally cap the less organic and older alluvial sands. Vegetation cover on the high flat commonly includes dense grasses, scattered prickly pear cactus, and dense stands of sagebrush and rabbitbrush (Figure 5). We sometimes use the term high flat to designate the relatively narrow zone that separates the low flat from the colluvial slope below the White Bluff and high gravel terrace zones. In those cases sediments range from sands to boulders. Vegetation is sparse and includes grasses, cactus, and some rabbitbrush and sagebrush.

High gravel terrace zones occur both on the east and west shores. The origin of these gravels is probably related to Pleistocene catastrophic floods. Our survey area seldom extended to the top of the terrace, rather it tended to be confined to the colluvial slope of the high gravel terrace (Figure 6).

The White Bluffs zone occurs only along the east shore. Sediments range from clays to cobbles in size. Their origin is probably glacio-fluvial. Our survey area never extended into the White Bluffs zone itself. Rather, it was confined to the colluvial slope portion of the White Bluffs immediately above the county road (Figure 7).

Four landforms characterize the shoreline. We use the term beach through high flat (BHF) to designate the landform represented by a cross section from the beach zone through the high flat zone (Figure 8). The BHF landform occurs along both shores. The beach through sand dunes (BSD) landform occurs only along the west shoreline; it is also represented by an appropriate cross section (Figure 9). We use the term beach to high gravel terrace (BHG) to designate the west and east shore landform represented by a cross section from the beach zone through the high gravel terrace (Figure 10). The beach to White Bluffs (WTB) landform occurs only along the east shore. It is represented by a cross section drawn from the beach to the White Bluffs (Figure 11).

Previous Cultural Resource Investigations

During the early twentieth century, prior to the arrival of professional archaeologists, relic collectors operated extensively in the study area (Cowles 1959). Relic collection remains an active pastime throughout the study area (Nick Paglieri 1981:personal communication) and evidence of "excavations" by collectors is widespread.

Figure 4. View of the beach and alluvial/aeolian sands landform (BAF) along the east side of Wooded Island; view is to the northeast.

Figure 5. View of the beach through sand dune (BSD) landform (right foreground) and beach through high flat (BHF) landform (right background) along the west shore; vegetation demarcates the two landforms; view is to the south.

Figure 6. View of the beach through high gravel terrace landform (BHG) along the east shore; view is to the south.

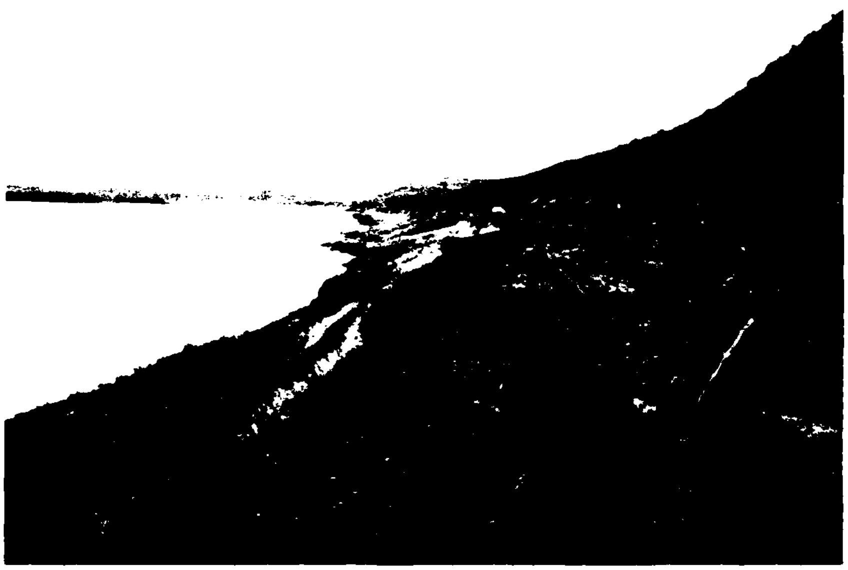


Figure 7. View of the beach through White Bluffs landform (WTB) along the east shore; view is to the north.

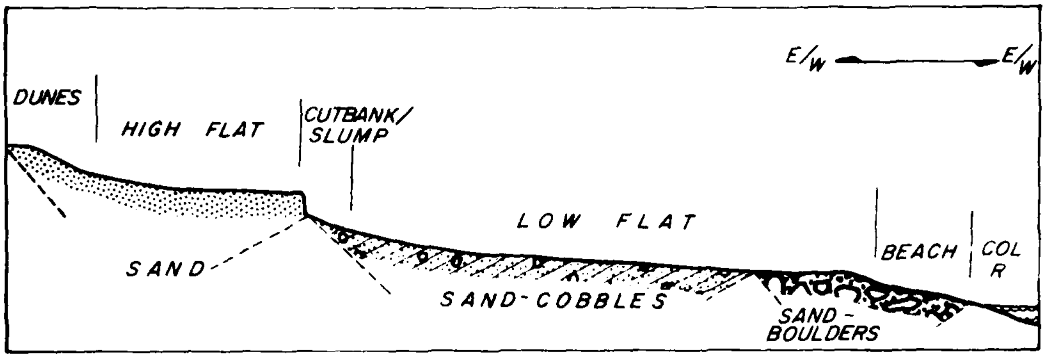


Figure 8. Schematic cross section of the beach through high flat (BHF) landform characteristic of portions of the east and west shores.

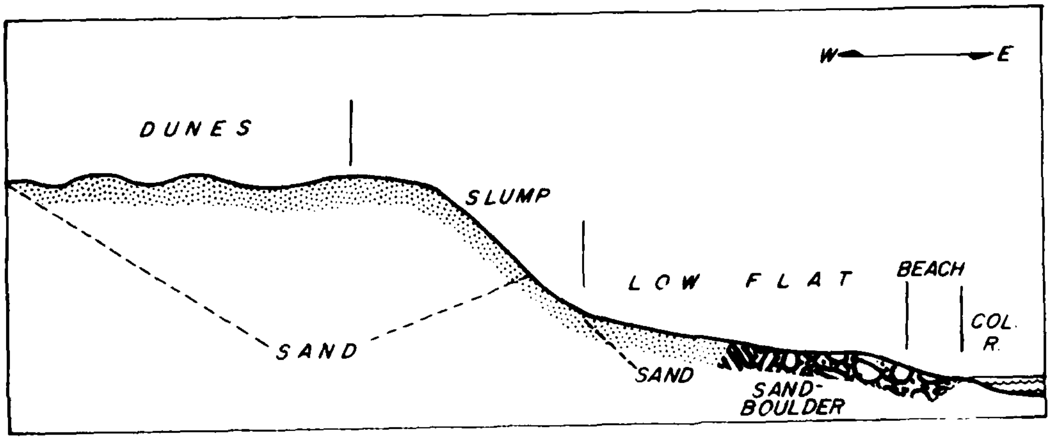


Figure 9. Schematic cross section of the beach through sand dune (BSD) landform characteristic of portions of the west shore.

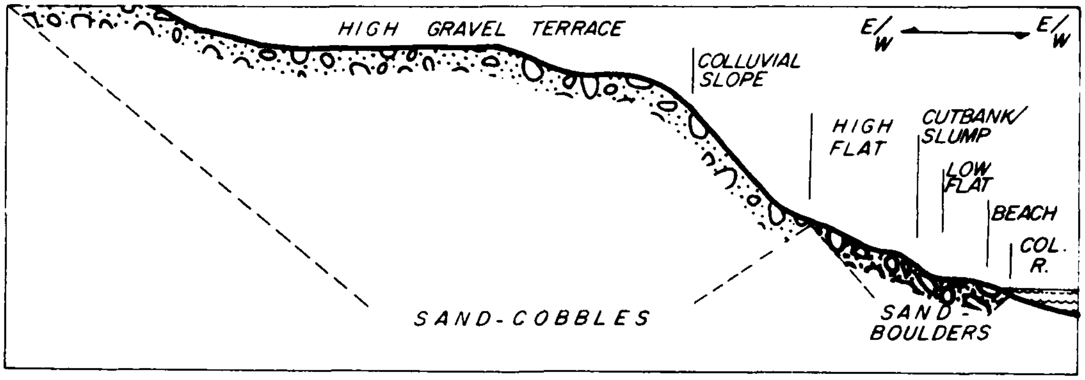


Figure 10. Schematic cross section of the beach through high gravel terrace (BHG) landform characteristic of portions of the east and west shores.

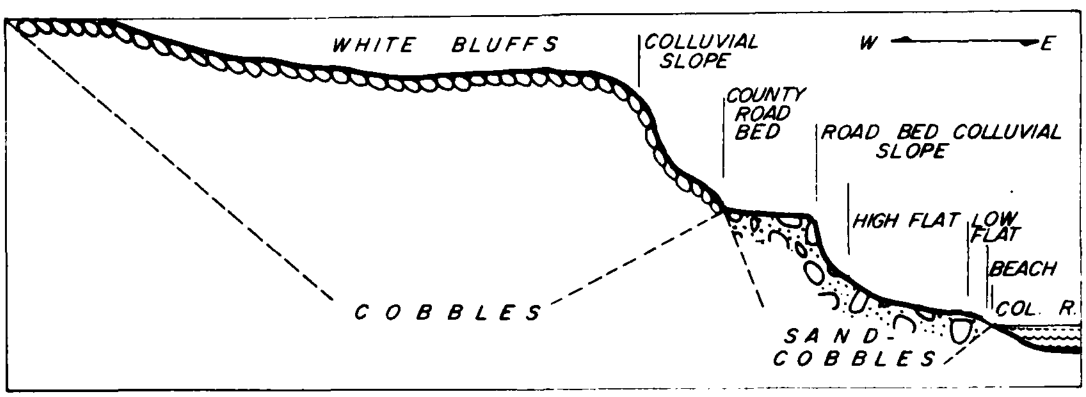


Figure 11. Schematic cross section of the beach through White Bluffs (WTB) landform characteristic of portions of the east shore.

Prior to the 1940s, the major archaeological investigations in the general vicinity of the project area were excavations conducted by Krieger (1928) in Grant County, north of our project area. In the late 1940s a major archaeological project was undertaken by the Smithsonian Institution in conjunction with the construction of McNary Dam and impoundment of the reservoir. Portions of the project area were surveyed using state-of-the-art methods in 1947 (Drucker 1947, 1948). Twenty-three sites were recorded and briefly described within the project area, but none were tested. Test excavations at sites recorded during the Smithsonian Institution's project were confined to areas south of our project boundary (e.g., Osborne 1957; Osborne and Crabtree 1961; Shiner 1961). The most extensive surveys in the project area were conducted by David Rice (1968a, 1968b). He recorded an additional 24 sites in the northern half of the project area, but some of them overlapped sites recorded by Smithsonian Institution personnel. None of Rice's sites were tested. Six other sites were recorded on the west bank and on islands within the project area during a survey sponsored by the Corps of Engineer's in 1975 (Cleveland et al. 1976). Finally, several island and bank sites were discovered and/or redocumented in conjunction with highway survey projects (Galm and Benson 1980; Vera Morgan 1981:personal communication). In all, there are 52 previously recorded sites in the survey area. Their approximate locations are illustrated in Figure 12. The Wooded Island National Historic District encompasses several of these sites. It includes the northwestern part of the survey area.

These surveys recorded various kinds of sites, including "pithouses," "open campsites," "fishing stations," "flaking floors," "burials," and "rock alignments." The surveys were reconnaissance level efforts. None of the previously recorded sites within the project area have been tested. Most of the sites recorded in the study area have been interpreted in terms of the "Sanpoil-Nespelem Model of Plateau Culture" (Ray 1933; Smith 1977). The general kinds of cultural materials documented at the previously recorded sites indicate that they could be assigned to the Cayuse and/or Historic phases and date between 2,000 and 150 years ago (Nelson 1969). However, based on projectile point form, it has been suggested that some sites in the project area and/or the immediate vicinity could date as early as 6,000 years ago (Rice 1968b:9-11).

By far the most extensive cultural resource investigations in the project area have been conducted by David Rice. The recent assessment of cultural resources in the Hanford Reach area of the Columbia River (Rice and Chavez 1980), includes our project area. The resulting report provides useful overviews relating to the areas of history, ethnography, and archaeology. Rice and Chavez (1980) also identify a number of important research questions concerning land use patterns, effects of the environments on prehistoric inhabitants, relationships between cultural remains and historic Wanapam groups, and cultural chronology. Those questions serve as a guide to the research design implemented for our project. General histories of the region have been prepared by Johansen and Gates (1967) and by Meinig (1968). Detailed histories of the project area are available from a variety of sources including Lyman (1919), Thompson (1952), and Parker (1979).

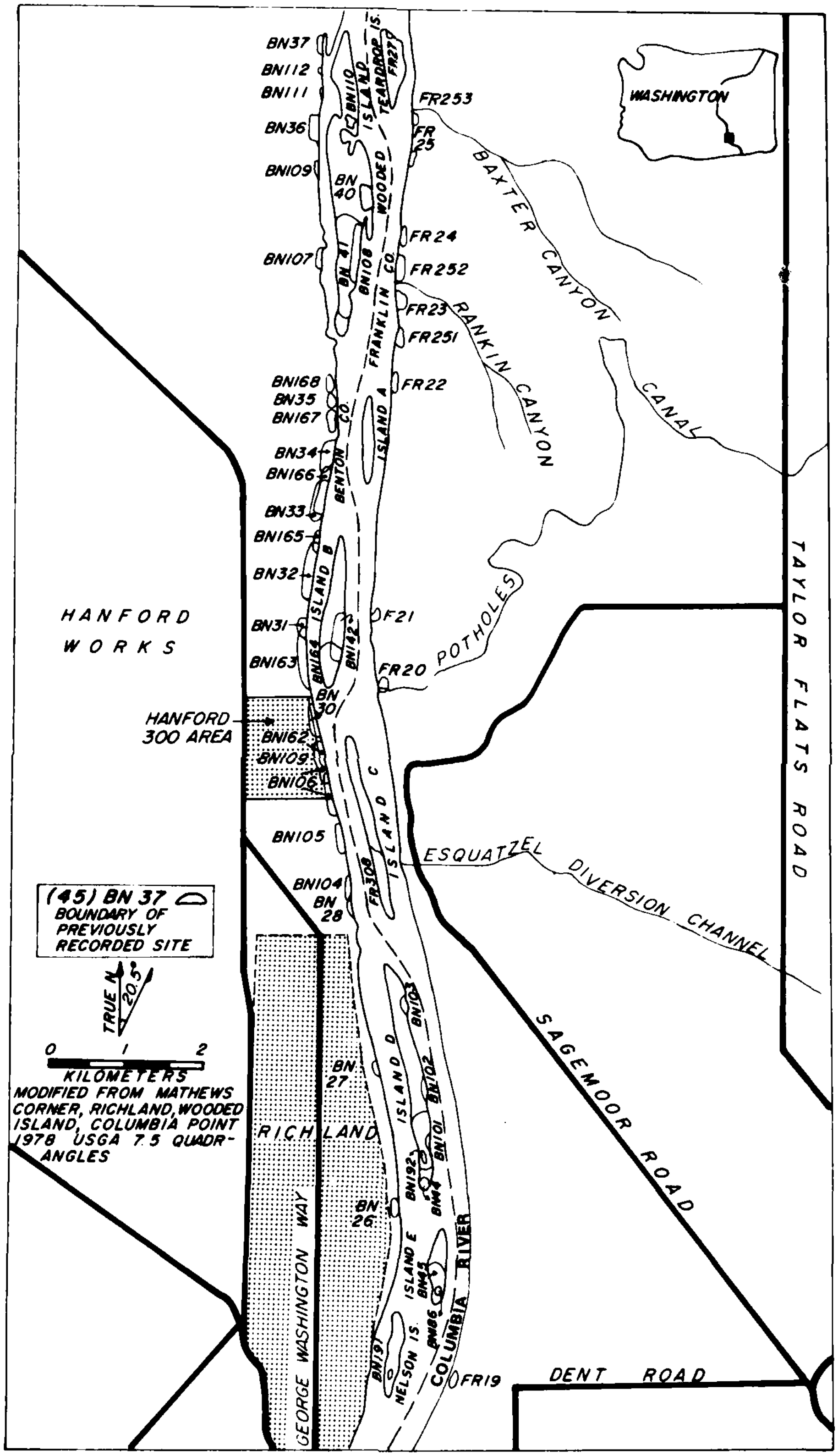


Figure 12. Map illustrating the approximate location of previously recorded sites within the survey area.

Cultural Setting

This discussion of the cultural setting includes a brief summary of prehistoric cultural sequences and a brief overview of the history of the area. The information presented is derived entirely from existing sources and no attempt is made to provide a critical review. We include this section only to familarize the reader with the manner in which cultural resources in the region have been viewed traditionally.

Prehistoric Cultural Chronology

Several cultural sequences have been proposed for the Plateau region since 1960 (Butler 1961; Daugherty 1962; Swanson 1962; Sanger 1967; Nelson 1969; Browman and Munsell 1969; Leonhardy and Rice 1970). For the most part, these sequences have been defined by artifact inventories from sites excavated as part of reservoir salvage programs along the Columbia and Snake rivers. Three sequences have been developed that are specific to the mid-Columbia region. Swanson's (1962) sequence is the original. Nelson (1969) and Galm et al. (1981) have produced revised sequences based on Swanson's work. Galm's sequence is employed for this discussion since it incorporates additional data from the uplands of the mid-Columbia region and is of more recent vintage. Each of his four phases are defined in terms of technology, subsistence, and settlement in the following sections.

Windust Phase (11,000-8,000 B.P). Windust is the basal phase for the Plateau region. It is characterized by evidence of a semi-nomadic lifestyle, utilization of different environments, and a highly developed chipped and ground stone technology using cryptocrystalline raw materials. The subsistence strategy consisted of communal hunting of large mammals and gathering; it was supplemented by small game, fish, and river mussels. The settlement strategy involved seasonal use of upland and riverine environments. Occupations in caves, rockshelters, sheltered open areas along the Columbia and Snake rivers and their tributaries are interpreted as semi-permanent winter occupations. The summer pattern entailed semi-nomadic use of specialized sites and exploitation of different upland environments. (Galm et al. 1981:90-91; Rice 1972; Leonhardy and Rice 1970)

Vantage/Cascade Phase (8,000-4,500 B.P.). This phase is subdivided into early and late Vantage/Cascade with the late subphase identified by an increase in grinding and pounding implements. This phase is characterized by an increased variety of cobble tools, and the appearance of a bone and shell technology (the shell providing evidence of coastal trade). The appearance of the Cascade technique in lithic technology (see Muto 1976) and a shift in the predominant raw material to a fine grained basalt from the earlier cryptocyrstalline. The subsistence strategy still consisted primarily of hunting large and small game but the importance of fish increased (judged from the number of net weights) as did the place of river mussels in the diet. The settlement strategy has a riverine focus with settlements linearly

arranged along rivers at confluences or rapids and the first appearance of semi-subterranean houses occurs during this phase (Brauner 1976). Upland sites are located mainly along canyon rims and appear to have been only impermanent settlements (Galm et al. 1981:92-94; Bense 1972; Leonhardy and Rice 1970).

Frenchman Springs Phase (4,500-3,000 or 2,000 B.P.). During this phase authors of the mid-Columbia phase sequence see a significant change in the artifacts and settlement pattern and link these to possible climatic change (Rice 1967). The Cascade technique is less widely used and the chipped stone technology is less sophisticated, generally. This corresponds to a return of cryptocrystalline and petrified wood as preferred raw materials. The increase in the number and diversity of ground stone and cobble tools documented in the previous (Vantage/Cascade) phase continues and hopper-mortar bases and pestles appear for the first time; "net sinkers" (notched pebbles) are common. The bone and shell technology remains as in the previous phase and cordage presumably present earlier is documented. In the inferred subsistence strategy the trend away from the importance of hunting and towards an increased use of seeds, roots, and river mussels continues. Hunting, however, is still important; the riverine focus, apparently less so. The settlement pattern stresses long term occupation of well watered upland sites, including base camps, extractive camps, bivouacs, and quarry sites. Utilization of riverine environments consists of small aggregates of pithouses arranged in linear fashion along the river. This phase is generally characterized by widespread exploitation of upland environments and maximization of root collecting (Galm et al. 1981:94-96; Nelson 1969; Swanson 1962).

Cayuse Phase (3,000-2,500 or 250 B.P.). The largest number of known sites belong to this phase. Presumably it represents the largest population, as well. It is parallel to the Harder Phase of Leonhardy and Rice (1970). The Cayuse Phase has been subdivided into two subphases, an early and late based on projectile point style frequencies and settlement size. An increased frequency of small projectile points ("arrowheads") and an increase in village size (corresponding, perhaps, to increase in population) separate the early from late sub-phases. The Cayuse Phase technology is characterized by considerable diversity, including the chipped and ground stone technologies, and evidence of woodworking, weaving, and bone and shell working. The typical artifact assemblage that defines this phase consists of small corner notched points and expanding stemmed points, composite harpoons, hopper-mortar bases, lanceolate and pentagonal knives, and three-pronged spears, also shell artifacts, bone and antler tools, twined basketry, and cordage (Nelson 1969). Subsistence strategies consist primarily of fishing with continuation of upland root gathering, and a decrease in the importance of hunting. Significant north to south variation in material culture has been linked to availability of resources and access to trade goods (Galm 1981:97-99; Nelson 1969).

Historic Overview

This overview briefly summarizes the history of the study area from Euro-American contact to the establishment of the Hanford Atomic Reservation in 1943 (then called the Hanford Engineering Works). The first documented Euro-American contact in the area was the Lewis and Clark expedition which passed near the survey area in 1805. Lewis and Clark traveled north up the Columbia as far as the mouth of the Yakima River where they encountered a people who called themselves the Sokulk (Thwaites 1959). The Sokulk have been equated with the ethnographic Wanapum (Smith 1982). In 1811 David Thompson of the British North West Company and Alexander Ross traveled through the area, on separate expeditions (Glover 1962; Galm et al. 1981). In that same year, David Stuart of the American Pacific Fur Company (or Astor Company) traveled up the Columbia from the Pacific and the Pacific Fur Company established Fort Okanogan (Galm et al. 1981). In 1818 David McKenzie and Alexander Ross established Fort Nez Perces at the mouth of the Walla Walla River for the North West Company (Fuller 1928). Fort Nez Perces became Fort Walla Walla in 1821 when the North West Company merged with the Hudson's Bay Company. During the 1820s the Hudson's Bay Company established a boat landing at White Bluffs (north of the project area) in order to facilitate the shipment of goods to Fort Colville (Galm et al. 1981:35).

The next step in the development of the area began with the founding, in 1836, of two missions by the American Board of Foreign Missions. Marcus Whitman founded Waiilatpu near the present city of Walla Walla and Henry Spalding founded Lapwai near the confluence of Lapwai Creek and the Clearwater River (Drury 1958). In 1847 Father Pascal Ricard and four Oblate of Mary brothers founded the mission St. Rose of Chem-na on the Yakima (southern outskirts of present day Richland), but abandoned it because of a lack of wood (Parker 1979). In 1847 the Whitman mission (Waiilatpu) was attacked by Cayuse Indians. Nine people, including the Whitmans, were killed. The "Whitman Massacre" was precipitated by the epidemics that had decimated the Indians since Euro-American contact. This incident led to the abandonment of the missions and the general area for the next several years.

The years following the "Whitman Massacre" were witness to several military campaigns against the Indians of the region. In 1847 a campaign was directed against the Cayuse in reprisal for the "Whitman Massacre" and in 1855 a campaign was directed against the Yakima (Splawn 1917). Gold was discovered near Fort Colville in 1854 but no immediate rush of miners occurred because of Indian "unrest" (Galm et al. 1981). In 1855, Isaac Stevens negotiated a reservation treaty with the Indians in the Walla Walla area. But the peace was broken due to increased non-Native American (primarily Euro-American) traffic through the area and intertribal dissension concerning the treaty in that same year. By the late 1850s warfare was widespread and involved bands of Yakima, Walla Walla, Palus, Coeur d'Alene, and Spokane (Gvie 1977). In 1858 Colonel Steptoe was defeated by the Coeur d'Alene and Palus. The retaliatory military strikes following this episode crushed the Indian resistance

(Gvie 1977). In 1859 treaties were signed and ratified establishing the four Indian reservations and three permanent U.S. military forts: Fort Walla Walla (different from the original Hudson's Bay Company fort which was ransacked in 1855 [Travis 1976]), Fort Simcoe, and Fort Dalles (Meinig 1968). The Steilacoom-Walla Walla Military Road was surveyed in 1854, following the route used by the Longmire Wagon Train in 1853 (Parker 1979:12),and was used during the Indian campaigns by the militia and the army (Jackson 1959).

Concurrent with the U.S. military defeats of the local Indians, gold discoveries in the Fraser River in Canada (1858) and in Idaho (1859) led to a "gold rush" and the development of roads and transportation centers. This gold rush had an indirect effect on the survey area in that roads and posts were established in the region. The Cariboo Trail (or Caribou Trail) which supplied mines to the north in Canada was open between 1858 and 1868 and passed through White Bluffs (Rice and Chavez 1980:19). In 1859 construction began on the Mullen Road between Walla Walla and Montana and in the 1860s a wagon road was built between White Bluffs and the Mullen Road (Galm et al. 1981:40). In the 1860s, White Bluffs became an important transportation center and was critical in the shipment of goods to Idaho and North (Meinig 1968). A ferry and permanent camp were established at White Bluffs by Thomas Howe in 1861 and the first cattlemen arrived soon thereafter (Parker 1979:13). In 1863 A.R. Booth took over Howe's ferry and built a trading post and way station. By 1866 White Bluffs had a hotel and several stores (Parker 1979:13).

The indirect impact of the gold discoveries on the study area changed in 1864.

> Quite a gold discovery was made in 1864 at Ringold bar on the Columbia. Leonard Thorp among others went from Moxee to seek his fortune in the sands of the River. Though he found nothing of value, quite a good deal of gold was found there by others. The white miners cleaned up $30,000 or $40,000 while the Chinese took out an amount not known (Lyman 1919:279)

Ringold bar is located about 5 miles north of the survey area. We have not found any other citations relating to gold mining specifically within the survey area. However, placer mining occurred throughout the region in general. The years between 1864 and 1900 were an era of intensive placer mining by the Chinese on the Columbia and its tributaries. The early Chinese placer mining activities were concentrated well north of the survey area from the Methow River to Rock Island and large camps were located at Richbar (1863), Rock Island (1864), and the mouth of the Chelan River during the early 1870s (Esvelt 1959:6-7).

> The bars along the river have long been worked yielding small pay; but they are now almost abandoned by the whites, who are looking for richer mines and in their stead are come great numbers of Chinese; . . . It is believed that there are now above one thousand of these persons working on the river between

> Priest's Rapids and Colville. They are said to be making from two to five or six dollars per day (Victor 1870:577 as quoted in Rice and Chavez 1980:19, 21).

The Chinese miners seem to have lived only in segregated camps. These camps were as self-sufficient as possible either because of lack of traditional supplies (Esvelt 1959:10-11) or the implied, open bigotry against them. In 1875 or 1877 violence erupted between the Indians and Chinese. Ten Chinese were killed below Rock Island. This violence caused the abandonment of the mid-Columbia by the larger Chinese camps and most of the Chinese miners (Esvelt 1959:10). In 1867, the Washtucna road bypassed White Bluffs and by 1870 regular ferry service at White Bluffs had been discontinued and the abandonment of the lower Columbia by the Chinese in 1875 ended the influence of miners on the area (Galm et al. 1981). But the stimulus they had provided to transportation led to the settlement and growth of the area.

As noted above, soon after the Indian campaigns, cattle ranchers began to move into the area. Before 1880 the ranchers seem to have pushed the Indians out of the study area onto reservations, but there is evidence of occasional recccupation of the Hanford Reach during the mid-1880s (Rice and Chavez 1980:22). Throughout the 1870s and 1880s population was scattered and consisted mostly of ranchers. Two severe winters, 1880-1881 and 1886-1887, caused huge cattle losses on the open range and the need for irrigation to grow winter feed became obvious (Parker 1979). This need led to the beginning of a new period of growth for the study area since with irrigation the land was very productive.

In 1888 the Yakima Irrigation and Improvement Company (Y.I.&I) was incorporated and announced its plans. Immediately following this, in 1889, a land boom took place as people filed claims on thousands of acres (Van Arsdol 1972:3-4). In the years between 1888 and 1893, six irrigation companies were formed in Benton County (Van Arsdol 1972). In 1892 the Y.I.&I. began constructing a canal from the Yakima River to Kennewick (Parker 1979:18). The economic crash of 1893 and subsequent depression did not affect this area until 1894 when all the irrigation companies declared bankruptcy (Van Arsdol 1972). Economic stability did return, however. A cable ferry was built in 1894 at Richland and in 1900 a horse powered paddle wheel ferry was in operation at White Bluffs. In 1903 the Northern Pacific Irrigation Company completed a permanent dam across the Yakima River at the head of the canal at Horn Rapids (Parker 1979:41). The Hanford Irrigation and Power Company was formed in 1906 and began service in 1908 which continued until 1943 (Parker 1979).

In 1905 Benton County was formed and the town of Richland (formerly Benton) acquired a post office. The towns of White Bluffs and Hanford acquired post offices in 1908 (Parker 1979). The years from 1900-1943 are a story of fruit farming, improved irrigation, and steady growth with economic slowdown during World War I and the Depression. The area received an economic boost in 1912 when natural gas was discovered in the Rattlesnake Hills area. Natural gas was produced until the wells dried up in 1941 (Parker 1979). The era of dam

construction began in 1929 with the U.S. Army Corps of Engineers' River Basin Surveys and in 1933 construction began on Grand Coulee Dam.

As of 1943, the study area had a history of steady growth and expansion but this all came to an abrupt end with the establishment of the Hanford Engineering Works by the Manhattan District of the U. S. Army Corps of Engineers in 1943. On March 6, 1943 the residents of the Priest Rapids Valley and the Lower Yakima Valley (including the towns of White Bluffs, Hanford, and Richland) were given between 2 weeks and 3 months to evacuate. The government offered what they believed was a "fair market value for the land." Regardless, everyone had to leave (Parker 1979:375-376). Soon thereafter most of the standing structures along that portion of the survey area west of the Columbia River were razed. It was not until the end of the war that the residents learned the cause of their evacuation; Hanford was building the atomic bomb.

Starting in 1943, the regular population growth shifted to the confluence of the Yakima, Snake, and Columbia rivers, the location of the Tri-Cities. The U.S. Army Corps of Engineers did little building in the area. Furthermore, as a result of the Manhattan project, access to the survey area was restricted. These factors have led indirectly to partial preservation of some of the prehistoric sites in a condition not possible elsewhere along the river.

CHAPTER 3

PROJECT OBJECTIVES AND STRATEGIES

All work conducted in conjunction with the survey is directed toward gathering data necessary to assess the area's cultural resources in terms of their significance and hence potential eligibility for inclusion in the National Register of Historic Places. The project is an inventory level survey, designed to document all readily observable cultural resources in the survey area.

Assessment of cultural resources must take place within a regional theoretical framework that forms the basis for the project's research objectives. The theoretical orientation and hence research objectives are achieved via the project's methodological orientation and techniques employed to gather and analyze data relevant to the stated problems.

It is accepted that much of the relevant information necessary to answer the questions fully is missing as a result of a a variety of natural processes and the happenstances of discovery (Collins 1975). We structure our research designs accordingly and strive to recover the kinds of available information necessary to address the problems at hand. Frequently, however, it is incumbent upon the archaeologists to gather additional information that is not directly applicable to the immediate assessment or research goals but could be useful for future investigations. These additional kinds of information often prove important in addressing the question of significance. Survey in the study area exemplifies this situation. Potentially significant information is being lost and should be gathered regardless of the specific research design. Agents of erosion, as well as small scale construction projects and the activities of relic collectors, are rapidly destroying a nonrenewable resource.

The following quote illustrates the kinds of cultural resources that were present in the study area early in the twentieth century:

> In the spring [1915] after school was out we took a boat and rowed to some islands above Richland where we found several graves that had washed out of the banks. They contained bottle shaped mauls, arrowheads, and a quantity of disc shaped shell beads. Farther upstream were more camps; none had ever been hunted. Wind had blown away the sandy soil and high water had washed away the banks. Indian artifacts were everywhere. The big banded net weights, notched sinkers and rough pieces we had to leave as there were too many to carry in our small boat. We found pestles, pendants, bone needles, and punches. . . . We thoroughly hunted both sides of the river and the islands between Richland and Hanford and found more camps and graves that had blown or washed out. . . . We never did any digging, with so much on the surface it never occurred to us to dig (Cowles 1959:1-2).

The kinds of cultural resources noted by Cowles in 1915 are no longer readily observable in the study area. Not only have erosional processes been active through the years, but long ago collectors began digging pits to recover relics and collecting even the more "mundane" kinds of artifacts (e.g., flakes and "cobble tools"). Recent evidence of these activities is abundant throughout much of the project area. Small scale construction activities such as road building and the installation of water pump platforms also are adversely affecting cultural resources. In short, both natural and human agents are actively involved in the destruction of nonrenewable cultural resources in the project area.

In spite of these kinds of destructive processes, initial inspection of the study area indicated the presence of potentially significant information and the possibility that enough knowledge could be gained from an intensive survey to make recommendations concerning National Register eligibility. We felt that an intensive survey could well eliminate the need for detailed test excavations which are themselves inherently destructive processes.

Collectively, this wide range of factors stimulated us to document the extant cultural resources in as detailed a manner as was practical. We recognize that to recover selected kinds of information we most certainly failed to document other types of information that would be important to different kinds of research and to future investigations. However, despite the fact that potentially important information is being lost and we did not record everything of potential importance, future research efforts can continue to gather additional and more specific kinds of significant information from the survey area. The kinds of information we recorded permit us to address a wide range of research questions and we are confident of the results, given the constraints of a survey project.

Theoretical Orientation/Research Objectives

The research objectives for this project are discussed in the proposals (Laboratory of Archaeology and History n.d. a, n.d. b; see Appendix A) submitted to the Corps of Engineers. As stated in those documents the survey data would be used to assess two ideas about late prehistoric land use which are proposed in the archaeological literature of the region. The model being assessed was formulated by Verne Ray (1933) and has been termed the "Sanpoil Nespelem Model of Plateau Culture" (Smith 1977). In its most basic form the model indicates that only winter villages and fishing camps would be expected to occur in a riverine setting, like that of the study area. Furthermore, the site locational patterns and site contents are predicted to have remained essentially static over the past 3,000 or 4,000 years (Dancey 1973).

There are two basic research objectives or questions that stem directly from the model and can be addressed with survey data: (1) Do the artifact assemblages reveal a dichotomy between winter villages and fishing camps or distinctions among other kinds of sites present? and

(2) Assuming that temporally diagnostic artifacts (e.g., projectile points) are relatively common and sites can be stratified according to age, does the archaeological record indicate little change in settlement systems during the last 3,000 or 4,000 years?

During the early part of the Phase I survey, it became apparent that a number of related, but more descriptively oriented questions could be addressed as part of the project's research design. These questions are noted in the Phase II survey proposal (Laboratory of Archaeology and History n.d. b). They are concerned with the spatial distribution of different kinds of artifacts and features, the different densities of cultural material, and the occurrence of these artifacts and features on different landforms. Ancillary questions are as follows:

(1) Can discrete areas ("type-areas") be classified according to the kinds (i.e., artifact assemblages) of cultural materials and/or their densities?

(2) If so, are given type-areas of cultural materials most commonly associated with given topographic settings?

(3) Is it possible and reasonable to infer activities from the different kinds of areas (i.e., are differences between artifact assemblages associated with differences in activities)?

Another potential research topic, recognized during Phase I efforts was mining activity. Our discovery of extensive and intensive placer mining remains was unanticipated. The regional literature related to cultural resources does not clearly discuss mining operations within the project area. We recognized linear and rectangular arrangements of cobbles and boulders as cultural features, but it was only through conversations with Dr. David Rice, of the Seattle Corps of Engineers office, that we were alerted to the possibility that these features were related to mining activities, particularly those carried out by Chinese workmen during the second half of the nineteenth century. A subsequent literature review of historical sources indicated that placer mining by White and Chinese workers did occur along much of the mid-Columbia River (Johansen and Gates 1967:322-327; Meinig 1968).

The major objective of the project with regard to historical resources is to provide descriptions of the kinds of artifacts and features observed in the field. These endeavors are directed toward determining the significance of the project area to regional history.

Methodological Orientation/Fieldwork

Initially we conducted a reconnaissance of the project area to assess the survey conditions and the range of cultural resources likely to be encountered. It was apparent that the distribution of cultural materials was virtually continuous throughout much of the project area. It was also apparent to us that it would be possible to define site limits in traditional terms on the basis of the presence/absence of cultural materials, topographic setting, or presumed site function, only in an arbitrary manner or after considerable analyses. Thus, rather than attempting to determine site boundaries in the more traditional fashions, we designed a nonsite method or spatial approach (Thomas 1979) to monitor the distribution of artifacts and features over the surface. Areas of varying densities or types of artifacts and features (i.e., sites) would be determined in the analysis stage of the project. A similar approach that emphasized the distribution of artifacts as opposed to sites has been employed in the Priest Rapids area (Dancey 1973, 1974).

To conduct the nonsite survey it was necessary to have reasonably accurate control over the location of spatial units in the project area. This was accomplished by laying a baseline along the north-south (long) axis of each island and along the east and west bank approximately between river miles 345 and 350. The baselines were first drawn on the 1 inch:400 feet Corps of Engineers' topographic maps and divided into 50 m units labeled sequentially. Using the map as a control, the baselines were then laid out on the ground.

Baselines, on the islands were laid out along a true north-south line as determined by compass orientation. The islands generally were not oriented in a manner that a single baseline could cover their entire lengths. It was necessary to offset the baseline so as to maintain its north-south orientation and still remain on the island. The baselines were divided into 50 m sections. On islands "B," "C," and "D," 50 m units were determined by the use of tape measures. This approach was abandoned for the islands surveyed later in the project. In those cases, distances were determined by the faster (and less accurate) means of pacing. Labeled flagging tape, sequentially designating the 50 m intervals, was tied to vegetation. At intervals ranging from 100 to 400 m along the baseline, and where the sediments were of small enough size to permit it, aluminum alloy conduit stakes were driven into the ground and served as semipermanent data points. In several instances 18 inch wooden hubs were used in place of metal stakes. Embossable aluminum tags were labeled (e.g., Upper McNary Survey, COE/WSU 1981, Island "D," baseline point D-8) and either placed inside the protruding end of the conduit stake or tied to the wooden stake.

Islands routinely were divided into three areas--east side, west side, and central portion--for purposes of surveying and monitoring the distribution of cultural materials. East and west sides consisted of the beach and low flat zones while the central portion was defined solely by the alluvial/aeolian sand zone or the low/flat zone. Widths of these islands ranged from about 40 to about 300 m.

Baselines were laid out and divided into 50 m (paced) units along the shorelines in a fashion similar to that of the islands. However, they were not oriented by compass; rather they were set parallel to the shoreline which had a general north-south orientation. Corps of Engineers' triangulation stations, located on high points overlooking the river (and marked on the Corps' topographic maps) were employed as reference points to make adjustments as necessary in the labeling of the flagging tape placed at 50 m intervals. Labeled conduit stakes were placed at 400 m intervals (or at those points where adjustments were necessary) along the shorelines. The west shore portion of the survey area ranged in width from 30 to about 300 m; the east shore survey area ranged in width from appproximately 50 to 200 m.

The islands and shores were surveyed using the transect method. Transects were oriented generally north-south but conformed more closely to the zones within each landform. As a rule, islands were traversed three times, with one set of parallel transects being walked on each side and one in the central portion. In some cases, however, the islands were narrow enough or the cultural materials were sparse enough to permit fewer passes (especially on the northern ends).

Two teams made up the field crew, one to locate artifacts and features and the second to document the kinds and distributions of materials. The following paragraphs describe the standard field techniques, but it should be pointed out that these varied somewhat depending upon the number of people in the field, the density of cultural materials, and amount of time that could reasonably be spent in each 50 m unit. For example, two teams, two to four individuals, were employed throughout most of the Phase I survey, but much of the Phase II survey was carried out by a single two person team.

The first team walked the survey area in parallel transects ranging from 5 to 30 m depending on the width of the landforms being traversed. Each member walked a zig-zag pattern within his/her transect and carried a set of colored wire flags to mark the location of artifacts and features. Red flags designated flaked lithics (i.e., chipped stone artifacts), blue flags denoted nonflaked lithics (i.e., pecked, battered, and ground stone artifacts), white flags indicated fire-cracked rocks (e.g., "hearth rocks" or "boiling stones"), and yellow flags marked historic items (e.g., metal, glass, or "trade beads"). Particular combinations of flag colors or numbers indicated features, densities of fire-cracked rock, and selected lithic materials.

The second team consisted of two individuals who were always the archaeologists responsible for fieldwork. Their primary task was to document the flagged materials, but these individuals also searched for and recorded additional cultural materials. Amounts of time spent in each 50 m unit tended to vary from 5 to 30 minutes. One member of the second team recorded standardized descriptions of artifacts, features, and densities of cultural materials and made special notations as necessary. This documentation was done relative to the surface zones within each 50 m unit. Photographs were also taken of common artifact and feature types. The second member drew contoured sketch maps (with 1

m contour intervals) of each 50 m unit. Sketch maps were based mainly on visual estimates of distances and elevations, although tape measures and paced measurements were periodically employed to check the reliability of visual estimates. The standard scale for the sketch maps was 1mm:1m. Generally, photographs were taken of the 50 m units (or groups of 50 m units), with the flags still in place, to illustrate the relative densities of cultural materials. Ideally, artifacts were plotted on the sketch maps according to flag color and features were plotted according to their designated type. This was not always the case since there were often too many artifacts to plot in the allotted time. However, all features and "diagnostic artifacts" were plotted. Additionally, schematic cross sections were drawn at 200 m intervals or less if landforms changed. Generalized sediment, vegetation, and geomorphic surface or landform information was plotted on the cross section diagrams and/or on contour maps.

As noted earlier, two project archaeologists carried out most of the Phase II fieldwork. For several reasons it was possible for this two person team to provide reasonable and comparable coverage of the Phase II area and maintain even faster survey rates in comparison with Phase I. First of all, the density of cultural materials in the Phase II survey area was far less than it was in the area surveyed during Phase I. In the second place, the survey techniques and system for recording specific cultural materials had been "debugged" largely during Phase I fieldwork. A specific project "guidebook" that included definitions and illustrations of all major artifacts, features, and landform categories was prepared and utilized during Phase II. Additionally, the project director participated during the initial days of fieldwork in January and February and volunteers assisted periodically. It should also be noted that much of the Phase II area was severely disturbed as a result of massive land modifications undertaken for construction purposes. Consequently, cultural material was sparse in those areas. Furthermore, unseasonal high water levels effectively reduced the width of beach zone and therefore the size of the survey area.

A no-collection policy was emphatically maintained within the Wooded Island National Register District; a general no-collection policy was maintained elsewhere, with several exceptions. Four projectile points and a single biface fragment were collected and their location plotted. These items were very small and probably could not be relocated for future study. Furthermore, these kinds of artifacts were sought after by relic collectors. Other potentially diagnostic items, including projectile points and bifaces from the Wooded Island District were sketched in field notebooks. One notched pebble and one grooved cobble were collected along the shore line from areas that were frequented regularly by the public. These items were also sought after by relic collectors.

Definitions of Artifact and Feature Terms

Artifacts and features are divided into two large categories, aboriginal and historic. The latter term refers to cultural manifestations of nonaboriginal--Euro-American, Afro-American, Chinese, etc.--origin. The definitions provided in the following subsections were working definitions. They served to facilitate documentation during fieldwork. For purposes of analysis several kinds of artifacts and features were regrouped.

Aboriginal Features. Except for pithouses, all aboriginal features recognized from the survey were described as "artifact features." That is, they were defined by a discrete concentration of culturally modified materials within a mappable area. By far the most common type was the "fire-cracked rock" (FCR) feature. Other kinds of aboriginal features included concentrations of shell and alignments of rock not readily attributable to mining or other historic activities.

Symmetrical circular or rectangular depressions ranging between 2 and 5 m across were mapped as possible or probable housepit depressions. In general, such depressions on flat, sandy surfaces were viewed as likely candidates for housepits. The presence of a berm around any such depression was recognized as important corroborative evidence. However, except on Wooded Island berms were not found. Depressions in the flood chutes or on hummocky surfaces were viewed with some distrust because they are more likely to be the results of flood waters or wind action than of cultural behavior. Vegetation, also, seems to be a sensitive indicator of housepit location. On the islands, housepit locations were frequently heralded by a change to taller bunch grasses, and on the mainland, by the presence of giant sage. Both these classes of vegetational indicators were corroborated by examination of the plant cover above the immediate area of the housepit floors recognized in cutbanks. For purposes of field documentations those "housepit" depressions that met our conservative criteria were mapped as probable housepit depressions. Those that met some of the criteria but were of questionable character were mapped as possible housepit depressions. A housepit floor was defined as a long, thin, slightly curved lens of dark sediment, frequently with fire-cracked rock eroding from near its center. Such stains were taken as the most certain indicators of housepit location.

All fire-cracked rock (FCR) features were defined as concentrations of thermally altered rock (i.e., rock exhibiting fracture planes, or cracks and generally red to pink in color). Four subdivisions of FCR features (FT) were recognized: (1) dispersed concentrations of FCR referred to as FTA features; (2) discrete concentrations of FCR for which dimensions and shape can be readily defined, referred to as FTB features; (3) intact concentrations of FCR which have retained such integrity that they are not only mappable, as in (2), but the rocks within them have a recognizable relationship to each other, e.g., they are "stacked", form an arch, or surround a shallow depression; these are referred to as FTC features; and (4)

concentrations of FCR exposed in or eroding from a cutbank, referred to as FTD features. Basin shaped dark (i.e., charcoal) stains about 1 m in diameter and readily visible in cutbanks were included in the FTD category even though they often did not have FCR within the basin.

Scattered FCR density estimates per zone within each 50 m unit was recorded in a standardized manner as follows:

-lack of FCR in the entire zone, recorded as absent;

-less than 1 FCR per 5 by 5 m area (or per 25 m^2), recorded as very very low FCR;

-1 to 4 FCR per 5 by 5 m area (or per 25 m^2), recorded as very low FCR;

-5 to 9 FCR per 5 by 5 m area (or per 25 m^2), recorded as low FCR;

-10 to 19 FCR per 5 by 5 m area (or per 25 m^2), recorded as medium FCR;

-20 to 49 FCR per 5 by 5 m area (or per 25 m^2), recorded as high FCR;

-more than 50 FCR per 5 by 5 m area (or per 25 m^2), recorded as very high FCR.

Shell features were defined as obvious concentrations of mussel shell. They occurred as lenses in a cutbank or eroding on a slope. They also occurred as dense concentrations on flat surfaces, particularily on the islands.

Cobble pile was a term used to describe concentrations of river worn cobbles. They tended to be small (less than 0.5 m in diam) features, commonly located in the beach zones. Some occurred on higher zones in sandy sediments and could indicate burial locations. In general, we were unable to determine their function or assign them to any cultural period. Since it has not been determined that these are not aboriginal features, they are included here.

Rock alignments were recognized in sands along the shoreline of the west bank and on the islands in unlikely mining locations. A few problematic, rectangular rock alignments were located also in mined areas. Although these had aboriginal cultural materials in the centers, including at least one discrete FCR feature, they are even less certainly included with the aboriginal features than are the rock alignments on sand and on the islands. Nonetheless their possible relationship to aboriginal activities cannot be readily dismissed. In all instances, the dimensions were recorded as were artifact associations.

Historic Features. Mining features, homesteads, trash dumps, hunting stands, boat launches, and landfills are all common within the survey area and, except for mining features, do not require definition. They are self-explanatory.

Mining features were recognized only after the survey was underway, but they were described initially as heavily disturbed areas. Mining features fall into several types and permutations of these types. In all instances the mining seems to have left scars below the original land surface and large piles of cobbles above the original land surface. That is, mining features were distinguished from the rock alignments in which rocks are set, and sometimes stacked, above the original land surface since in the rock alignments there is no substantial subsurface modification. Mining features were most abundant along the northern portion of the west shore.

These features occur in several types: (1) long parallel lines of cobbles on either side of a chute excavated 10-30 cm. below the probable original ground surface; (2) circular to rectangular depressions with the cobble debris forming berms around the pits; (3) long, curvilinear chutes with cobble debris lining the edges of the chutes; and (4) large, low piles of cobbles. In all four types, the areas between readily recognized features were often marked by loose pebbles and cobbles. In other words, pebbles and cobbles were not "set" into the finer sediments and were not imbricated as are the pebbles and cobbles on the north end of the river islands. Much of the beach zone and low flats along the west shore line exhibited these kinds of areas. Relatively unmodified (i.e., not obviously mined) ground surfaces were distinguished by fine sediments, some grasses, and often aboriginal artifacts and relatively discrete features. Areas with loose cobbles and areas of relatively unmodified surfaces occurred less frequently where there were curvilinear mining features, and more frequently in the locations with shallow linear mining features. The thickness of the features commonly varied as the inverse of the above relationship. Therefore, it seemed reasonable to associate the difference in mining features with differences in the intensity of mining. Areas of curvilinear features appeared to be more intensively mined than areas with linear features.

Aboriginal Artifacts. Artifacts were divided into basic categories of flaked lithic artifacts, nonflaked lithic artifacts (pecked or battered or ground stone), fire-cracked rock, shell, bone, glass, and historic Euro-American Chinese artifacts. For the aboriginal materials, the first two categories--flaked lithic and nonflaked lithic artifacts--were subdivided.

Flaked lithic artifacts were predominantly cobble tools but other types were recorded. Specific kinds of flaked lithics included unifacially flaked cobbles, bifacially flaked cobbles, minimally flaked cobbles (with one or two flakes removed), flakes (with primary, secondary, or tertiary cortex classifications and flat, angular, or point-of-contact platforms), cores, bifaces, and "projectile points". A

single object could fall into several of these categories, particularly unifacially and bifacially flaked cobbles. A cobble could exhibit unifacial flaking on one edge and bifacial on two others. All cobbles were prescribed four edges, although some cobbles actually are triangular in outline, and others have complex geometric shapes. Cobbles with all four edges modified frequently may be considered cores. Ideally, cores were defined as cobbles with one to many flakes removed in a pattern which did not produce a protruding or "working" edge. Flakes were not formally assigned edge numbers but they, also, could have bifacial or unifacial flaking on any or several edges. Edges on all flaked lithic artifacts were identified as sharp, battered, or rounded.

Nonflaked lithic artifacts include battered, pecked, and ground stone. The battered stone artifacts, like the flaked cobbles, were described using a four-edge system. Pecked and ground stone artifacts were assumed to have only two edges or faces. Most often these artifacts were 25 to 35 cm disk-shaped boulders, with a central pecked or ground surface 7 to 12 cm in diameter.

Notched pebbles and grooved cobbles were recorded through much of the area. They were always described and individually plotted on the contour maps because they may be considered functionally discrete artifacts. The notched pebbles were commonly on small, disk-shaped pebbles or cobbles; they were termed "net-sinkers" in the field (as they are in the Plateau literature) and were described by their greatest diameter and number of notches (one to four). The grooved cobbles are commonly identified in the literature as "canoe weights," "boat weights," or "large net weights." In the survey area these were commonly very large cobble to small boulder size rocks. Generally, they had a slight tendency toward being rod-shaped rather than spherical.

For both flaked and nonflaked lithic tools the grain size of the artifact was recorded as either microcrystalline or cryptocrystalline (i.e., chert or petrified wood), very fine to fine-grain, medium-grain, and coarse-grain. Where material types as well as descriptive terms were known (e.g., granodiorite or basalt) these were added.

Scattered shell and bone were also recorded. The same density estimates were employed for these items as for FCR. Isolated occurrences of any of these artifacts were recorded, although (except for glass) they most frequently occurred as part of artifact features or in association with other cultural materials. The common association of bone or shell with cultural materials encouraged us in our belief that these were part of cultural deposits rather than natural.

Historic Artifacts. Historic materials were described individually for artifacts which we did not recognize (e.g., galvanized sheet metal, 0.2 by 0.3 m). They were called by their functional names in instances in which they were recognized (e.g., woodstove part, soldered-seam tin can, or heavy gauge wire).

Methodological Constraints

While our methods and techniques were standardized and relatively systematic, they were not always as consistent nor as thorough as we might have desired. Human error and nonrecognition of low visibility artifacts (Schiffer et al. 1978) are probable causes for most shortcomings. These factors affect most survey projects and we take this opportunity to list and comment on those that most directly affect our research objectives.

(1) We started fieldwork on Island B and it was largely there that our system was "debugged". As a result, we expect that documentation was rather inconsistent in comparison to the remainder of the survey area.

(2) We were faced with a problem of "looking for needles in haystacks." For example, the notched pebbles or "net sinkers" blend in with the pebble and cobble beaches, rendering their discovery most difficult. A similar problem was encountered with the generally small chert artifacts which seem to disappear into the pebbles and cobbles. The very nature of a surface survey leads to a propensity to discover the larger artifacts, and this is especially evident when the sediments contain many pebbles, cobbles, and boulders.

(3) In some areas there were simply too many artifacts to record each one individually and we had to be satisfied with estimating their density.

(4) In all probability, some items were simply misidentified. This problem is most apparent in difficulties of distinguishing fire-cracked rock, at a glance, from rocks cracked by weathering processes or mining operations.

(5) Different individuals sometimes recorded the same artifact or feature by a different name. This was particularly evident in identifications of cores versus other multifaceted flaked lithic artifacts and in designation of one, rather than another, of the various kinds of fire-cracked rock features.

(6) High water levels in the reservoir flooded significant portions of the beach area or river margin and rendered discovery of artifactual materials difficult to impossible. This was most evident during Phase II fieldwork. During warm days this effect was mitigated by wading into the river (and retrieving materials for descriptive purposes), but on cold days this was not practical. Frequently, we had to content ourselves with "peering" into the water to discover cultural materials. Interestingly, that approach seemed comparatively effective.

(7) Vegetation was sometimes so dense as to totally obscure ground visibility. During the Phase I survey this was not a major problem because we could generally see artifacts in the beach and slump zones. However, large areas of limited ground visibility are commonly encountered in the Phase II area and were exacerbated by high water levels that flood the entire beach. In partial compensation we made forays into the dense vegetation in search of bare ground and exposed cutbanks were examined in greater detail.

(8) Extensive relic collecting has apparently resulted in the removal of a large number of (potentially) temporally diagnostic artifacts (e.g., projectile points, beads, and pestles). From surface information we had no way to distinguish readily between the effects of relic collecting and the lack of such materials in the aboriginal assemblages. Island E in particular had been subjected to extensive and intensive relic collecting and "diggings".

(9) In some cases, it was extremely difficult to distinguish among premining era aboriginal features, nineteenth century placer mining remains, postmining era features constructed by aboriginal populations, depression era mining remains, and the remains of various post-1940 Atomic Energy Commission or military operations along the river margin.

(10) Some areas of the project, especially those south of river mile 345 on the west shore and the central portion on the east shore were represented almost entirely by recent landfill or construction activities that had either obscured or destroyed earlier cultural resources. The area just north of Richland was so disturbed and vegetation so dense that we cannot consider it surveyed. However, there is little doubt that important cultural material has survived the disturbance processes.

Awareness of the above problems was the best overall mitigative measure. Recognition usually led to some compensatory measures such as closer scrutiny in searching for smaller artifacts, greater communications among team members in recording, development of rapid means of estimating numbers of artifacts, and implementing more standardized means to distinguish among similar artifact or feature types.

We feel that even though there are obvious shortcomings in our methods and techniques, the range of variability in cultural materials and their relative proportions have been identified. This permits us to effectively and efficiently address the stated research questions and fulfill the requirements of the contract.

Methodological Orientation: Analysis

Analysis of the survey data is concerned with discerning the spatial relationships of various artifacts and features with regard to each other and to different topographic situations. It is intended that these relationships be used to address questions of chronology, seasonality, and settlement patterns.

A large number of artifact and feature attributes were recorded during fieldwork. For example, we recorded the degree of cortication on flakes, made size estimates on all artifacts, described the configuration of FCR features, and made notations on the depths of cultural materials exposed in cutbanks as well as the character of sediments. It was simply not practical to present that level of information in the report; rather it remains in our field records for future use. Transformation of field information into readily utilizable data was a major task. It required development of more encompassing definitions for specific cultural material types in such a manner as to permit placement of several kinds of artifacts into one category. For example, unifacially flaked cobbles with one battered edge and one sharp edge were placed into a category of unifacially flaked cobbles with multiple battered edges. In essence, it was necessary to "lump" and "smooth" the data so as to facilitate manipulation.

One of our objectives was to prepare an inventory list that documented the kinds of cultural materials recorded within each 50 m survey unit. This was accomplished by reviewing the field notes, extracting the necessary information, and preparing computer code sheets that described the materials within each 50 m unit. For this purpose islands were divided along their long axis; the east and west sides were considered as separate 50 m units. In the following sub-section we discuss each of the categories in the inventory list.

Variables Derived from Survey Information

This subsection defines and explains the kinds of information documented in the report for each 50 m survey unit or block. The kinds of information in effect represent the variables used in subsequent statistical analysis. When computers are utilized to manipulate data and when many variables are employed it is necessary to develop a kind of code language. Table 1 presents the abbrevations or codes used for the various descriptive terms. The complete inventory list is presented in Appendix B. Maps illustrating the location and content of each survey unit are presented later in the text. The following is a brief discussion of each variable used in the statistical manipulations.

Location (LOC). This variable indicates the general location of a 50 m survey unit within the project area. The following terms are used: (1) SES and SEN, indicate the southern and northern parts of the east shore, respectively; (2) SWS and SWN indicate the south and north portions of the west shore, respectively; (3) IAE and IAW indicate the east and west

sides of Island A, respectively; (4) IBE, IBW, ICE, ICW, etc. indicate the same things for other islands designated by alphabetic letters; and (5) ITE or W, designates Tear Drop Island, IWE or W is for Wooded Island, and INE or W is for Nelson Island.

Unit or Block (BLOCK). This variable designates a particular 50 m survey unit or block for a specific island or segment of the shore. The southern mapping coordinate of each 50 m unit was selected as the reference number for coding purposes. For the islands, mapping coordinates started with 0 at the south end of each island and the numbering went north. Therefore, the 50 m unit between coordinates 4-5 on a particular island would be coded as 4 because 4 is the southern coordinate value. However, the shores were divided into northern and southern segments. This was because we wanted to start the shoreline survey in an area with relatively intact cultural materials so as to have an idea of the nature of shoreline resources prior to beginning the Phase II survey. However, at the time shoreline survey began, we did not know which maps would be used to define river miles 340 and 350. Consequently, we started surveying well within the project area, at about river mile 348.2. For the northern shore segments--labelled SWxN on the west shore and SExN on the east side--mapping coordinate values started at the 0 stake and numbering went from south to north. Therefore, for the survey unit between map coordinates 0-1 in the northern segments of the shore, that 50 m unit would be coded as 0. However, for the southern segments of the shores--labelled SWxS on the west shore and SExS on the east side--coordinate values started at the stake labeled 0 and the numbering went from north to south. As a result, the survey unit between map coordinates 0 - 1 for the southern shore segment would be coded as 1 because 1 is the southernmost coordinate for that 50 m unit.

Landform (LAND). This variable characterizes the dominant type of landform for a 50 m unit. In several instances, landform designation changed in the middle of a survey unit. The following rule was used in these cases. If the new landform type extended less than 10 m into a 50 m block, then the survey unit was coded with the previously used landform designation. However, if the new landform type extended more than 10 m into the unit, it was coded with the new landform type.

Landform types BHF, BSD, BHG, and WTB were restricted to the two shores. Type BSD was applicable only to the west shore and type WTB was used only for the east shore. Landform types EBC, WBL, and BLF were confined to the islands (Table 1). Type BLF was used for stretches of the island lacking the alluvial/aeolian sand zones. This generally applied to the northern and the very southern ends of the islands. Landform types EBC and WBL were used for island segments with alluvial/aeolian sand zones. Type EBC designated 50 m units on the east side of the islands. This designation included materials found on the east beach, the east low flat, the alluvial/aeolian sand, and the eastern and western cutbanks or slump of the alluvial/aeolian sand zones. Type WBL was restricted to the west side of the islands and includes materials from the western beach and the western low flat zones.

Table 1. Abbreviations for descriptive terms.

Abbreviation	Descriptive Term	Abbreviation	Descriptive Term
Features		Artifacts	
ALGN	Rock alignment	PKC	Pecked cobble
BSH	Buried shell feature	PPT	Projectile point
DPRSS	Depression, probable house pit	UEB	Unifacial, battered edge
FTA	Dispersed FCR feature	UES	Unifacial, sharp edge
FTB	Discrete FCR feature	UMB	Unifacial, battered edges
FTC	Intact FCR feature		
FTD	Eroding FCR feature	UMS	Unifacial, sharp edges
HP	Housepit floor in cutbank	Densities	
PILE	Cobble pile	BFCR	Beach zone, FCR
SSH	Surface shell feature	DFCR	Dune zone, FCR
		HFCR	High flat zones, FCR
Artifacts		SCBO	Scattered bone
BEB	Bifacial, battered edge	SCSH	Scattered shell
BES	Bifacial, sharp edge	Landforms	
		Island	
BMB	Bifacial, battered edges	EBLF	East beach and low flat
BMS	Bifacial, sharp edges	WBLF	West beach and low flat
BTC	Battered cobble	EBC	East beach through cutbank
CBIF	Chert biface		
CCORE	Chert core	WBL	West beach through low flat
CEM	Chert, edge modified	West Shore	
CFLK	Chert flake	BHF	Beach through high flat
GRND	Ground stone	BHG	Beach through high gravel terrace
GROV	Grooved stone		
MFC	Minimally flaked cobble	BSD	Beach through sand dune
NBIF	Non-chert biface	East Shore	
NCORE	Non-chert core	BHF	Beach through high flat
NEM	Non-chert, edge modified	BHG	Beach through high gravel terrace
NFLK	Non-chert flake		
NOTCH	Notched pebble	WTB	Beach through White Bluffs

Fire-Cracked Rock Feature, Type A (FTA). This refers to the number of dispersed FCR features. Figure 13 illustrates an example of FTA along the west shore.

Fire-Cracked Rock Feature, Type B (FTB). This variable records the number of discrete FCR features for which dimensions and shape can be readily determined. Figure 14 illustrates an example of FTB on Island D.

Fire-Cracked Rock Feature, Type C (FTC). This variable refers to the number of intact FCR features. Figure 15 illustrates an example of FTC from Island B.

Fire-Cracked Rock Features and Hearth Features, Type D (FTD). This variable considers the number of fairly intact features that are eroding out of a cutbank. It includes those with fire cracked rock (FCR) and those that exhibit only charcoal stains (i.e., hearths). Figure 16 illustrates an example from Wooded Island of an eroding hearth feature without FCR.

Estimated Density of Beach Area FCR (BFCR). This variable refers to density estimates of FCR for the beach and low flat zones exclusive of any FCR features. Estimates ranged from absent which was coded as 0 to very high which received a value of 6. In cases where the density estimates varied throughout the 50 m unit, the maximum estimate value observed for that unit was coded. For example, if the low flat zone had low density (code 3) FCR and the beach zone had medium (code 4) and very low (code 2) density FCR, then the 50 m unit would be coded as medium density.

Estimated Density of Dune Area FCR (DFCR). This variable records the estimated density of FCR for the sand dunes and the associated slump zone of the dune. Estimates exclude all features. They range between absent (code 0) and very high (code 6). The maximum FCR density estimate made for the dune or slump zones of the 50 m block was recorded. The variable was only applicable when the landform variable (LAND) was coded as BSD. As a result the DFCR variable was only applicable for the west shore.

Estimated Densities of Higher Area FCR (HFCR). This variable is an estimate of FCR densities for the high flat and cutbanks or slump zones. These estimates exclude FCR features. Values range from absent (code 0) to very high (code 6). When estimates for the high flat or cutbank/slump zones varied within the survey unit, the maximum observed density value was recorded. This variable was not applicable when the landform varible (LAND) was coded as BSD or WBL. This is because BSD indicates the presence of dunes rather than high flats, and landform type WBL only includes the western beach and the western low flat for the islands.

Surface Shell Features (SSH). This considers the number of surface shell features observed in a 50 m unit. All features regardless of their landform location within the 50 m unit are considered.

Figure 13. Example of a dispersed fire-cracked rock feature (FTA) from the west shore.

Figure 14. Example of a discrete fire-cracked rock feature (FTB) from Island D.

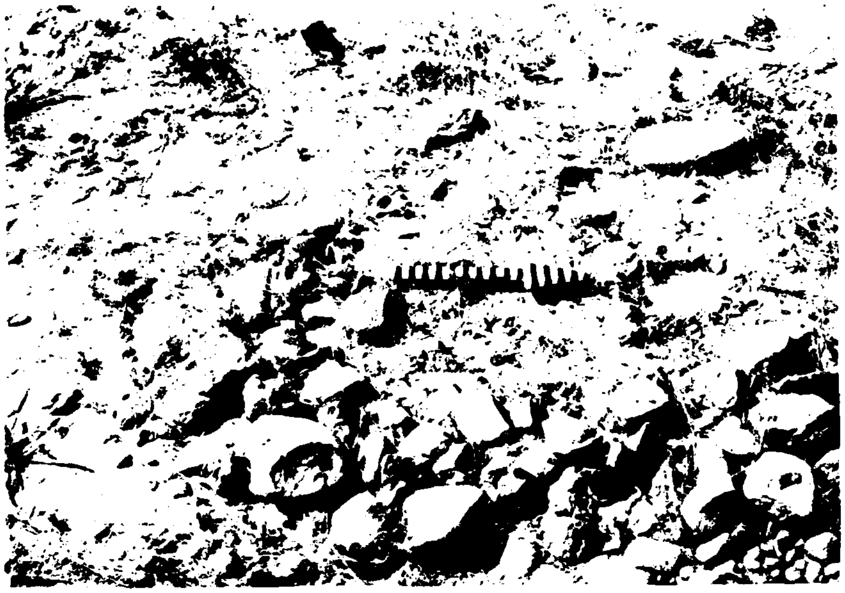


Figure 15. Example of an intact fire-cracked rock feature (FTC) from Island B.

Figure 16. Example of an eroding hearth feature (FTD) from Wooded Island.

Buried Shell Features (BSH). This refers to the number of buried shell features observed in the cutbanks.

Scattered Shell (SCSH). This variable is an estimate of the density of scattered shell regardless of location on the landform. Estimates exclude surface or buried shell features. Densities range from absent (code 0) to very high (code 6). If estimates varied within a survey unit, the maximum observed density would be recorded.

Scattered Bone (SCBO). This variable is a density estimate of scattered bone. Burned and unburned fragments of mammals and fish were considered together. However, fish bones were recorded in only four instances. The vast majority of this material was observed in the cutbanks or in recently eroded bank slump in association with other artifacts. Estimates could range from absent (code 0) to very high (code 6). When densities varied within a 50 m block, the maximum density value observed for that unit would be recorded.

Rock Alignments (ALGN). This refers to the number of rock alignments observed within a survey unit. These alignments may be related to some undetermined aboriginal activites. They are generally found in areas unsuitable for mining such as sandy river marginal bars. Additionally, the rocks are placed on the original ground surface without any substantial subsurface modification. In many cases, the rocks are stacked on top of each other. Aboriginal artifacts and features are associated with these alignments. All alignments are considered regardless of their configuration or size. Figure 17 illustrates an example of rock alignments along the west shore.

Cobble Piles (PILE). Cobble pile is a descriptive term for small piles of cobbles whose function and chronological affiliation could not be determined. These cobble features are generally less than 0.5 m in diameter and the rocks are generally well sorted for size. These features are typically two or three cobbles high. Cobble piles are more frequently found on gravelly surfaces near the water but they also occur in sandy sediments. Figure 18 illustrates an example of a cobble pile on Island E.

Depression (DPRSS). This variable refers to surface depressions that are likely to indicate aboriginal housepits or similar features and were recorded as probable housepit depressions during fieldwork. These depressions are generally symmetrical and may be circular, oval or rectangular in outline. They typically ranged between 2 to 5 m in diameter. The association of a berm and distinctive vegetation were also used to differentiate these depressions from natural features.

Housepit Floors (HP). This variable refers to dark stains observed in the cutbanks that are considered to represent the floors and/or walls of aboriginal housepits. These features are characterized as relatively thin (<0.3 m in thickness), slightly concave lenses of charcoal, and/or organic rich sediments. These stains extend at least 1.5 m along the cutbank. This variable excludes smaller, charcoal rich features often associated with oxidized sediments that likely represent hearths.

Figure 17. Example of rock alignments (ALGN) along the west shore; white flags indicate the location of a discrete FCR feature; view is to the east.

Figure 18. Example of a cobble pile (PILE) on Island E.

Figure 19 illustrates an example of a housepit floor exposed in the cutbank slump on Island B.

Minimally Flaked Cobble (MFC). This variable refers to chipped stone artifacts classified as minimally flaked cobbles. These artifacts are characterized as having one flake removed either unifacially or bifacially from a given edge (Figure 20). Artifacts included in this category may have more than one edge from which only one flake has been removed. This category also includes artifacts commonly referred to as split cobbles. If a cobble has one flake removed from one edge but more extensive flaking along another edge(s), this artifact would not be considered as minimally flaked cobble. The more extensive modification of the cobble would take precedence in classifying the artifact. Minimally flaked cobbles are believed to be representative of the early portion of the reduction sequence. These artifacts are interpreted as indicating quarrying activities.

Unifacially Flaked Cobble, Sharp Edge (UES). This variable refers to cobbles that exhibit a series of flake scars unifacially along one edge. This edge must be sharp.

Unifacially Flaked Cobble, Battered Edge (UEB). This includes artifacts that exhibit a series of flake scars unifacially along one edge. However, the flaked edge is battered or rounded.

Unifacially Flaked Cobbles, Sharp Edges (UMS). This variable includes cobbles that have been unifacially flaked along more than one edge (Figure 21). All of these edges must be sharp.

Unifacially Flaked Cobbles, Battered Edges (UMB). These artifacts are cobbles that exhibit more than one edge that has been unifacially flaked. However, at least one of these edges must be battered or rounded (Figure 22).

Bifacially Flaked Cobble, Sharp Edge (BES). This variable refers to cobbles from which a series of flakes have been bifacially removed from only one edge. However, these artifacts may also exhibit one or more unifacially flaked edges. Edge morphology is sharp.

Bifacially Flaked Cobble, Battered Edge (BEB). Cobbles that have been bifacially flaked along only one edge are included in this category. However, this edge must be battered or rounded.

Bifacially Flaked Cobble, Sharp Edges (BMS). This variable refers to artifacts that exhibit multiple bifacially flaked edges. Other edges could be unifacially flaked. All edges must be sharp.

Bifacially Flaked Cobble, Battered Edges (BMB). This variable includes cobbles that have been bifacially flaked along more than one edge. These artifacts may also exhibit unifacially flaked edges. At least one edge must be battered or rounded.

Figure 19. Example of a housepit floor (HP) eroding from the cutbank/slump on Island B.

Figure 20. Example of a minimally flaked cobble (MFC) along the east shore; note the incipient cones--they are indicative of heavy blows to the cobble surface.

Figure 21. Examples of a unifacially flaked cobble with multiple sharp edges (UMS) and a pecked cobble (PKC) with isolated incipient cones; items from east shore.

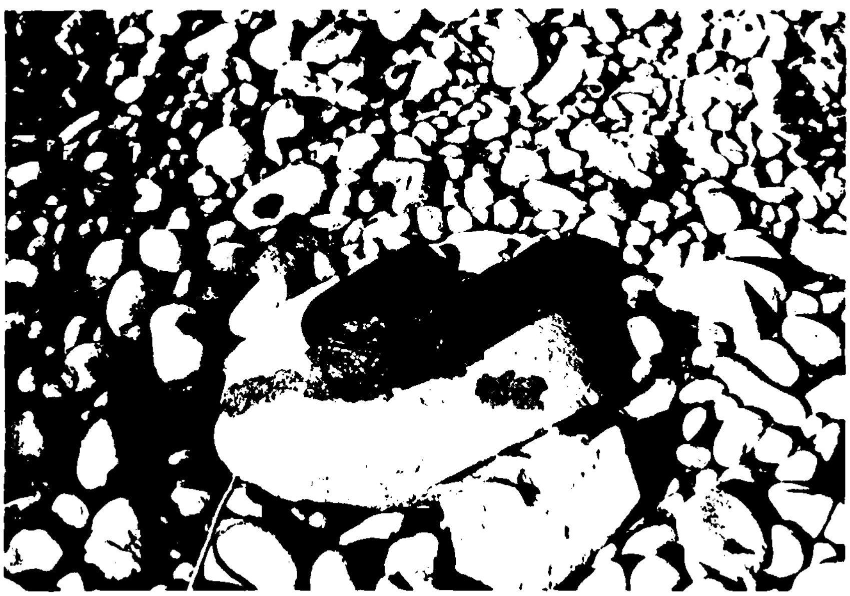


Figure 22. Example of a unifacially flaked cobble with multiple battered edges (UMB) from Nelson Island.

Chert Core (CCORE). This variable deals with cores and shatter made of microcrystalline and cryptocrystalline materials. We use the term chert as a catch-all. It includes jasper, chalcedony, opal, and mineralized wood, as well as chert. Cores are defined as cobbles exhibiting adjacent flake scars unifacially at a given point along an edge. However, removal of these flakes did not produce a likely "working" (protruding) edge. Shatter is defined as blocky, angular pieces that lack evidence of striking platforms or negative bulbs of force. However, some evidence for flake scars is present. Shatter is believed to result from the excessive application of force. Cores and shatter are believed to represent the early portion of the reduction continuum. A maximum of nine specimens could be coded for a unit.

Nonchert Core (NCORE). This variable refers to cores and shatter that are made of nonchert materials. These materials include basalt, quartzite, granodiorite and other very fine-grain to coarse-grain material.

Chert Flakes (CFLK). All flakes and chips made of chert materials are included in this category. Chips are broken flakes that lack the proximal end. Platform morphology and extent of cortex are not considered.

Nonchert Flake (NFLK). This variable considers all flakes or chips that are nonchert materials. Chips are flakes that are missing the proximal end.

Chert Edge Modified Flakes (CEM). This variable refers to edge modified flakes or chips that are made of chert materials. Both unifacially and bifacially modified specimens are included (Figure 23, e). This category would include artifacts commonly referred to as scrapers or unifaces.

Nonchert Edge Modified Flakes (NEM). This variable includes nonchert flakes and chips that exhibit at least one modified edge. The modification may be unifacial or bifacial.

Chert Biface (CBIF). This variable applies bifaces made from chert materials. Bifaces exhibit a series of flake scars from both faces at the same location along an edge (Figure 23, g-i). This category excludes cobble tools.

Nonchert Bifaces (NBIF). Bifaces that are made of nonchert materials are included in this category. Cobble tools are excluded.

Projectile Points (PPT). All pointed end bifaces exhibiting a haft element are included in this variable. These projectile points are not differentiated on haft morphology, size or material type. However, all of the collected and/or observed points are made of chert materials (Figure 23, a-f).

Battered Cobbles (BTC). This variable refers to cobbles that exhibit at least one battered edge/margin. Artifacts commonly termed pestles and

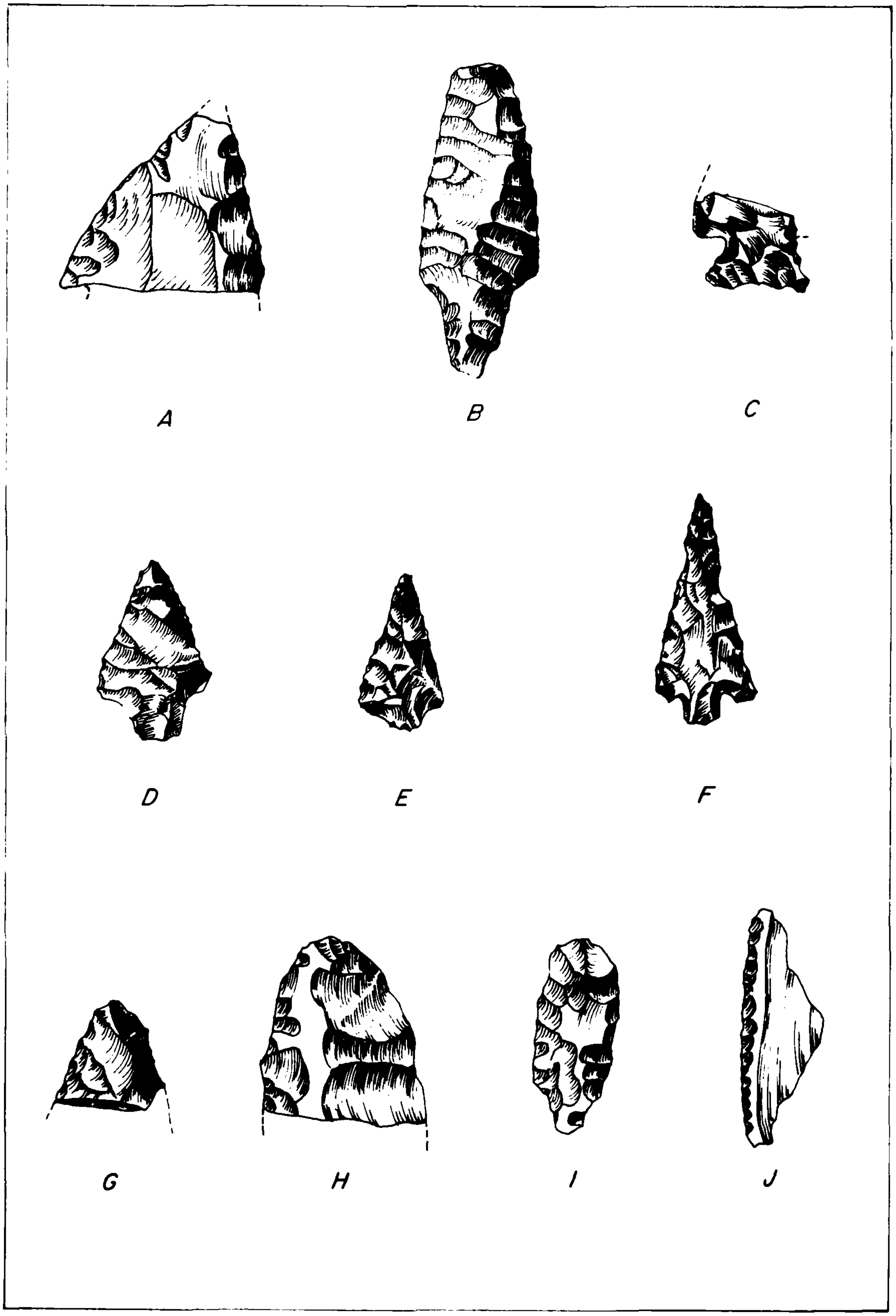


Figure 23. Examples of chert artifacts from the study area; projectile points A-F; bifaces G-I; and edge modified flake J; sketches approximate actual size; items A, B, H, I, and J are drawn from field sketches.

hammerstones are included in this category. Figure 24 illustrates an example of a BTC that may have been used as a pestle. Material type or extent of battering are not considered for this variable.

Pecked Cobble (PKC). This variable includes cobbles or boulders that exhibit at least one pecked surface. Generally, these artifacts are greater than 25 cm in diameter. Material type, number of pecked surfaces or the extent of modification are not considered for this variable. This category includes artifacts commonly referred to as anvil stones (Figure 21) or hopper mortar bases (Figure 25).

Ground Stone (GRND). All ground stone artifacts are placed in this category. These include edge ground cobbles, manos, metates, grinding slabs, etc. These items were very rare in the survey area. Material type, number of ground surfaces or edges, and the extent of grinding are not considered for this variable.

Notched Pebble (NOTCH). This variable refers to small, relatively flat, disc-shaped pebbles or cobbles with a notch along at least one edge. These artifacts have been described as "net weights" or "net sinkers" in the Plateau literature (Figure 26, b). For coding purposes, no distinction was made on the basis of material type or number of notches.

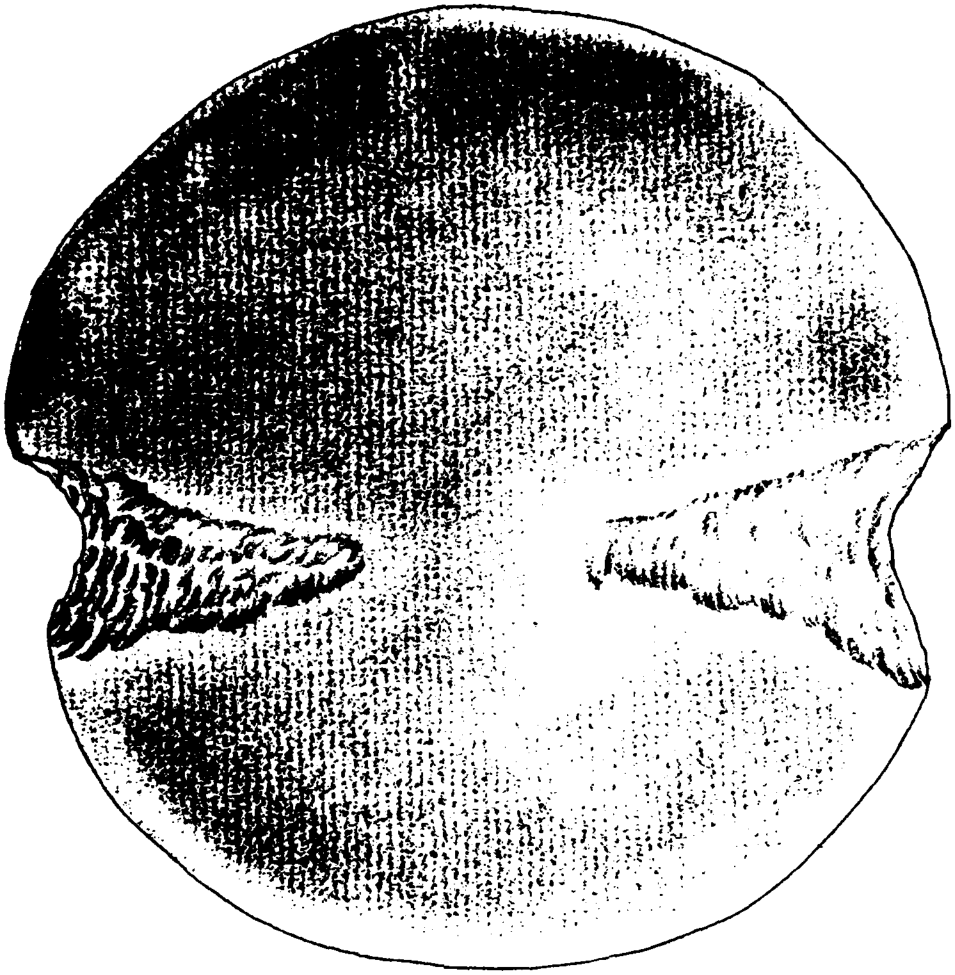
Grooved Cobbles (GROV). This descriptive category includes relatively large cobbles or small boulders that are grooved. Generally, these specimens are rod-shaped. This category refers to artifacts that have been called "canoe weights", "boat weights" or "large net weights" in the Plateau literature (Figure 26, a). Partial and full grooved specimens are included in this category. No material type distinction was made for coding purposes.

Mining (MINE). This variable moniters the presence or absence of mining features. Mining areas are characterized as piles of cobbles and/or boulders that are directly associated with subsurface modification (Figure 27 and 28). The subsurface disturbance is critical to distinguishing mining features from rock alignments. Although the intensity and configuration of the mining areas varied, all are considered under this variable. If mining features are present, the survey unit is coded as 2 for this variable. A code of 1 is assigned if mining features are absent in a survey unit. Although curled strands of a 1/4 inch heavy gauge wire are often associated with the mining features, the occurrence of only this wire in a survey unit is not considered sufficient for designating this as a mined unit. Therefore, this 50 m block would be coded as 1 (absence) for the mining variable. Additionally, metal hopper-rockers are likely associated with mining activities. However, if a hopper-rocker is observed but the cobble piles and subsurface modification are lacking, a code of 1 (absence) would be assigned to the survey unit.

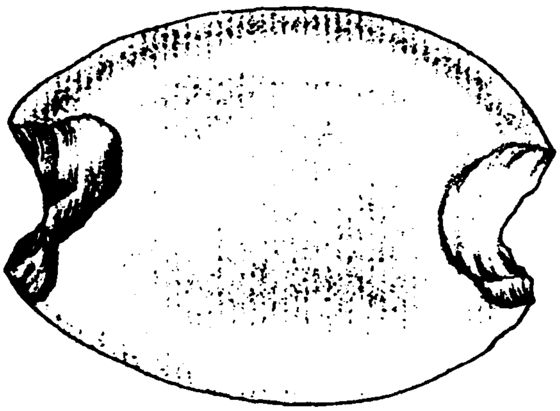
Historic Structures (STRUC). This variable applies to abandoned, historic structural remains. Examples include late 19th and/or early 20th century homesteads, foundations, stock tank concrete foundations, pump stations (Figure 29), and dugouts. If any of these features are

Figure 24. Example of a battered cobble (BTC) from Island D.

Figure 25. Example of a pecked cobble (PKC) from Nelson Island.



A



B

Figure 26. Examples of a grooved cobble (GROV) from the west shore, A; and a notched pebble (NOTCH) from the east shore, B; sketches approximate actual size.

Figure 27. Example of an intensively mined area along the west shore; view to the southeast, Island A in the background.

Figure 28. Close-up of an intensively mined area along the west shore; view to the east, White Bluffs in the background.

observed a code of 2 (presence) is recorded for the unit. A code of 1 (absence) is assigned if these features were lacking.

Scattered Historic Artifacts (HSCAT). This variable monitors the presence or absence of late 19th/early 20th century materials. Basically it refers to isolated pre-World War I items such as solder-seam tin cans, 1/4" heavy gauge wire, metal hopper-rockers, wooden pipes/culverts, wood beams, purpled glass, a variety of decorated historic ceramics, glass trade beads, etc. Figure 30 illustrates an unusual historic artifact that may represent part of a grinding wheel. If any of these items are present, the survey block receives a code of 2. If none were observed a code of 1 is assigned for this variable.

Historic Dump (DUMP). This variable refers to historic trash dumps that contain materials estimated to be older than World War II but younger than World War I. These features may be refuse areas associated with depression-era mining activities. If these trash dumps are observed, the unit is coded as a 2 (presence) for this variable. A code of 1 (absence) is assigned the block if these features are lacking.

Residential/Industrial Areas (RESID). This variable monitors major land modifications due to modern (post-World War II) residential and/or industrial developments. The modifications are believed to significantly alter the overall context of earlier cultural resources. Some examples are landfill areas, residential areas, parking lots, extensive bulldozed areas, modern intake structures, flumes, and modern pump stations. A code of 2 indicates the presence of significant land modifications within the survey unit. A code of 1 indicates no land modification of this type or only relatively insignificant disturbance of the 50 m block.

General Construction Activities (CONST). This variable is concerned with modern generalized construction, agricultural, or extensive pothunting activities that significantly alter the overall context of earlier cultural resources. Examples of this type of disturbance are irrigation ditches, drains, roads (excludes minor jeep trails), and the slide area on the east shore. A code of 2 indicates the presence of significant modifications of this type. A code of 1 notes the lack of significant disturbance.

Water Level (WATER). This variable monitors reduced visibility due to high water levels. A code of 2 was assigned if the water level was high enough to obscure the variety and quantity of cultural remains within the beach zone. The survey block would receive a code of 1 if the water level did not critically impede our assessment of the beach zone cultural resources. High water was more of a problem during the survey of the east shore, the southern half of the west shore, Wooded Island, and Tear Drop Island.

Discussion. There were a number of stretches along both shores that received a code of 2 (presence) for both variables that monitored widespread disturbance (RESID and CONST). For these areas land

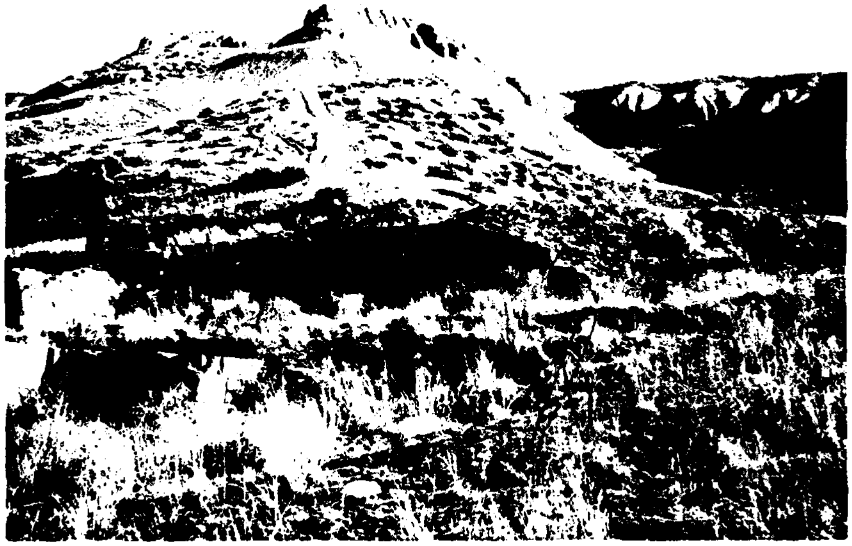


Figure 29. A late 19th/early 20th century pump station foundation, located along the east shore; view to the west.

Figure 30. A historic artifact, possibly part of a mechanical grinding wheel.

modification was so extensive that even the presence or absence of cultural remains had to be questioned. The extensive affected areas include: (1) the high gravel terrace landform on the west shore that had been modified for the construction of a Richland subdivision; (2) the southern stretch of the high flat landform on the west shore that had been modified to accommodate a Richland city park; (3) the major land slide area along the east shore that is part of the WTB landform; (4) the northern segment of the White Bluffs area on the east shore that was badly disturbed by road construction and a large landslide; and, (5) an extensively bulldozed area at the location of a partially completed intake structure in the Taylor Flats area of the east shore.

Small isolated sections that were also coded as 2 (presence) for both disturbance variables are large intake structures, flumes, pump-stations, and large public boat ramps.

One other area received a code of 2 on both the RESID and CONST variables. This was a stretch of 22 contiguous 50 m survey units on the west shore. It remains uninvestigated. That stretch was characterized by 0% visibility on the colluvial slope, the low flat and the beach, due to dense vegetation. In this area, tumbleweeds had accumulated to a height of nearly 3 m. High water also prevented us from documenting the presence or absence of artifacts along the beach. Additionally, the high terrace portion of these survey units had been disturbed by near-by construction activities. Some areas appeared to have been altered by heavy equipment and spoil piles containing concrete slabs which obscured the original ground surface for much of the area. Periodic examination of the tumbleweed area revealed "spoil material" on the slope and the low flats. In short, it was determined that the area did not merit further examination.

Computer Analysis

Computer assisted analyses were directed towards investigating the relationships among the distributions of artifacts and features located in the survey area. These analyses also served to compress the data into a reasonable number of discrete categories so as to facilitate description and discussion of a massive quantity of information. The 50 m long survey units (BLOCK) form the primary spatial groups within which frequency counts and density estimates were compiled for 38 artifact and feature categories. The analysis was performed in four steps:

(1) Creation of the computerized (exhaustive) data file, from the survey information.

(2) Production of descriptive statistical data summaries.

(3) Refinement of the data file by regrouping of variables and cases.

(4) Use of cluster analysis to partition cases into groups.

The procedures for and results from each of these steps are presented below.

Creation of Computerized Data File. Each 50 m long survey unit (BLOCK) forms a single observation (or case) in the data file. Data from 1,320 units were recorded, with 45 data types (or variables) coded for each block. The coded scores (or values) for each variable measure the occurrence or quantity of that variable in the survey block. These variables represent two types of archaeological remains, artifacts, and features. This data file is presented as Appendix B (Inventory List), where the data from each survey block are coded onto a single line (or row). Each variable is represented by a column (or columns) on the row, and the data values are the recorded numbers. Three types of information have been recorded for each case: locational, landform, and artifact/feature frequencies.

(1) Locational Variables: The placement of the survey block on the landscape is recorded by two variables.

(a) Location (LOC) records the island/shoreline designation. Eight islands (each with east and west sides) have been surveyed, resulting in 16 designations for the islands. The two shorelines--east shore and west shore--each contain north and south portions, resulting in four designations for the shore.

(b) BLOCK records the survey unit number within each LOC. These are numbered sequentially.

(2) Landform Variable: The variable LAND records a three-letter code for the landform type within each survey block. There is a total of nine landform types in the survey area.

(3) Artifact/Feature Variables: Thirty-eight variable values were entered for each block. Three types of values have been used.

(a) Density Estimates: Five aboriginal artifact/feature density estimates were recorded for each block. These measure the maximum concentration observed within any 25 m^2 (5 m by m) portion of the survey block.

(b) Frequency Counts: Thirty-three aboriginal artifact/feature variables were entered for each block. These values are the actual number of items found during survey.

(c) Presence/Absence Variables: Seven variables were recorded with this type of value. Four of these recorded historic features, while the other three provided information about recent disturbance by construction, residential, and high water levels.

Initial separation of cases was done to delete from analysis those blocks which were highly disturbed (those which showed presence of both construction and residential areas). Table 2 summarizes the results of deleting disturbed units.

Production of Descriptive Statistics. An exploratory examination of the remaining data file was conducted using two approaches: production of frequency tables and correlation coefficients. Frequency tables were obtained which showed the counts for all variables in the exhaustive data file, grouping the cases by LAND type and by LOC.

The quantity of material recorded varied highly among LAND types throughout the survey area. The interrelationships among variable values were not easily seen by frequency counts and correlation matrices were constructed to enable more accurate evaluation of these complex interrelationships. The 36 aboriginal artifact/feature variables were used to form a 36 by 36 correlation matrix for each LAND type and LOC.

Correlation coefficients measure the linear relationship between the values for two variables among the cases in which they appear. Correlation values vary between -1.000 and +1.000. The magnitude of the correlation coefficient denotes the strength of the linear relationship between the two variables. Large absolute values indicate a close relationship, while smaller absolute values indicate a weak relationship. The sign (+ or -) indicates the direction of the relationship. The maximum value (+1.000) indicates a perfect positive correlation (larger values of one variable always co-occur with larger values of the second variable). The maximum negative value (-1.000) indicates a perfect negative correlation (large values of one variable always co-occur with small values of the second variable). Values around 0.000 indicate the two variables are linearly unrelated (i.e., large and small values of both variables co-occur together) (Blalock 1979:398; Thomas 1976:386).

The results of this test showed consistent patterns of correlated variable pairs for each LAND type from one LOC to another. A large number of high positive correlations were obtained, along with many uncorrelated or weakly correlated variable pairs. However, no negative correlations were obtained that were even moderately strong. This result is interpreted as indicating that in blocks with large amounts of aboriginal material several kinds of remains often co-occur in high quantities. Likewise, other blocks have low amounts of all material. High quantities of some material remains do not co-occur consistently with low quantities of other materials, as this would produce high negative correlations.

The co-occurrence of variables has been used to develop a regrouping of the 36 variables from the exhaustive data file into 22 new variables which more parsimoniously represent activity classes, as will be described below.

Refinement of the Data File. Three types of refinement have been performed in order to provide a consistent data file for use in the

Table 2. Disturbed and undisturbed 50 m units by location and landform

Location/ Landform *	Disturbed		Undisturbed		Totals	
	n	%	n	%	n	%
Islands (614)	--	--	614	100	614	100
BLF (454)	--	--	454	100	454	100
EBC (80)	--	--	80	100	80	100
WBL (80)	--	--	80	100	80	100
West Shore (353)	87	24.6	266	75.4	353	100
BHF (200)	66	33.0	134	67.0	200	100
BHG (18)	18	100	--	--	18	100
BSD (135)	3	2.2	132	97.8	135	100
East Shore (353)	133	37.7	220	62.3	353	100
BHF (91)	22	24.2	69	75.8	91	100
BHG (167)	63	37.7	104	62.3	167	100
WTB (95)	48	50.5	47	49.5	95	100
Overall Totals	220	16.7	1100	83.3	1320	100

*Key for landform abbreviations
BLF: Beach and low flats, east and west sides of islands
EBC: East beach through west cutbank, islands
WBL: West beach and low flat, islands
BHF: Beach through high flat, shores
BHG: Beach through high gravel terrace, shores
BSD: Beach through sand dune, west shore
WTB: Beach to White Bluffs, east shore

cluster analysis: (1) recoding the density estimate variables; (2) regrouping of variables; and, (3) regrouping of cases.

The five density estimate variables (BFCR, DFCR, HFCR, SCBO and SCSH) were coded with values which represented density ranges. These were recoded to represent frequency counts, so that they became comparable to all other frequency count variables (Table 3). This was required by the nature of the cluster analysis, which utilizes frequency counts. As can be seen in Table 3, the mean value of the density range was used as the recoded value for the lowest five density codes. The highest density (6) was recoded as 50.0, to provide a conservative measure for those high density values.

The results of the correlation matrices were combined with archaeological rationales to develop a plan for combining the 38 aboriginal artifact/feature variables from the exhaustive data file into 22 new variables. These 22 variables in effect condense the range of archaeological materials present in the exhaustive data file.

On each island, the survey blocks were originally divided into east and west portions. East and west sections were combined for each 50 m block. This reduced the number of cases from 614 to 307. In order to combine the variable values, two different treatments were accorded the two types of artifact/feature data. For frequency count variables, the totals were summed for both sections. For density estimate variables, the larger of the two estimates was used to represent the new blocks. This procedure produced comparable 50 m long blocks across each island and reduced the number of relatively undisturbed cases from 1,100 to 793 for the total survey area.

However, this large number of cases still resulted in excessive computer processing time when running the cluster analysis. It was therefore decided to combine adjacent blocks, forming 100 m long cases. This reduced the number of cases without deleting any of the recovered data. Adjacent blocks were lumped where two criteria could be met. First, both blocks had to be the same landform. Lumping different landforms would defeat one purpose of the analysis, namely, the independent evaluation of archaeological patterns for each landform. Along the shoreline a second criterion was used which enabled the regrouping of blocks separated by no more than two disturbed units. Since no disturbed units were present on the islands, this criterion was applied only to the east and west shorelines. After combining each two adjacent units in the same landform, a single unit sometimes remained (i.e., it had no adjacent unit with which to combine). In those situations the following procedure was used. The totals for the frequency count variables were doubled; the density estimate variables were left unchanged. In essence, this procedure rendered the artifically created unit identical to the actual one and made the cases comparable with those that had been combined. We recognize that this approach may not be valid statistically, but it was our best solution to problems resulting from excessive computer processing time. However, we do not think the overall analytical results were affected significantly, because only a small number of the 50 m survey units were treated in this fashion.

Table 3. Comparison of exhaustive data density codes with recorded frequencies

Exhaustive Data File Density Codes (term)	Density Range per 25 m^2	Recorded (frequency count) Values
0 (absent)	0	0.0
1 (very, very low)	< 1	0.5
2 (very low)	1-4	2.5
3 (low)	5-9	7.0
4 (medium)	10-19	14.5
5 (high)	20-49	35.0
6 (very high)	> 50	50.0

The result of this regrouping of ' ɜs reduced the 793 cases to 408. The cluster analysis was run with t . 408 cases and 22 new variables as the data file. Our objective in conducting the culture analysis is to group together or classify the areas' cultural resources into a small number of categories. This is a data reduction approach that facilitates discussion of similar kinds of cultural resources as they are manifested across the landscape.

Cluster Analysis. The K-Means clustering program (PKM) in the BMDP statistical software package was used for the cluster analysis (Engelman and Hartigan 1981:464-473). K-Means is only one of a number of available clustering algorithms. It was chosen for this analysis because of several advantages which it exhibits over other clustering programs researched. First, it embodies two intuitive features of effective archaeological classification schemes; it maximizes within cluster homogeneity as well as between cluster isolation (Doran and Hodson 1975:181). Second, it characterizes each cluster by the mean value (centroid) of its members for all variables. This accords well with Ford's concept of an archaeological type (Ford 1954:54) and allows description and comparison among clusters to be based on their case means for all variables. Third, there is a distinct advantage over most other clustering programs in the ability of this program to repeatedly reassign cases to clusters, regardless of the order of data entry or of previous cluster solutions. The K-Means program is iterative not hierarchical. At each step, it reviews the classification and attempts to reallocate cases among clusters until further movement of cases no longer reduces the error. This procedure has advantages over hierarchical algorithms. In hierarchical procedures each cluster is always directly derived from the previous cluster solution. Once formed, a cluster can never be broken and its members recombined with cases from another cluster. This can lead to anomalous solutions, and often has been found unsuitable in archaeological applications (Doran and Hodson 1975:120; also see Hodson 1969 and Green 1975 for examples). The iterative nature of K-Means algorithms avoids this problem. Lastly, this program produces statistics which allow evaluation of all cluster solutions, in an attempt to determine the "best" number of clusters.

Euclidian (straight-line) distance is used to measure similarity among cases, to assign cases to their "nearest" cluster, and to evaluate the error of the cluster solution. This distance is computed by comparison of the values (for each of the 22 variables) for each case to the mean value (cluster centroid). This distance is termed the error (i.e., the discordance between the cluster centroid and the individual case values).

It is clear that this algorithm is very sensitive to changes in the scale of variable values, and it therefore requires all values to be presented to the program in the same scale. Furthermore, it requires these values to be in a scale which will reflect archaeological importance in order for the cluster analysis to result in archaeologically meaningful groupings of the cases. One housepit is not equal in importance to one fire-cracked rock, and thus a weighting system must be employed which compensates for differences in importance

among the variables. Several authors have debated the utility of various weighting schemes, (see Doran and Hodson 1975:172-175 and Christenson and Read 1977:165-166 for discussions of variable weighting) but no single approach has gained general acceptance.

For this analysis, four classes of variables were defined to weight the artifact/feature counts. Table 4 displays this weighting information. Classes 2, 3, and 4 totals (for the survey area) were set equal to that for class 1 (N = 9,828). The multiplication factor became the weighting value for each case. Thus, the flaked/nonflaked lithic totals (N = 3,485) were multiplied by 2.82 to become equal to the total for scattered FCR, shell, and bone. Each case value for the flaked/nonflaked lithic variables was then multiplied by 2.82. The figure of 16.77 was used for small features and housepit depressions were multiplied by 185.43. This weighted data file was used for the cluster analysis, producing distance measures with greater archaeological validity than unweighted values could provide.

One question which remains in the use of the K-Means algorithm is how to evaluate the success of various cluster solutions. In other words, how does one know which number of clusters produces the "best fit" for all the data? Several methods have been suggested to evaluate the "best fit" or global optimum (Doran and Hodson 1975:182). It has been suggested that ". . . by studying the relative homogeneity of clusters at successive levels, and by producing a graph for this clustering criterion against numbers of clusters defined, a clear level of clustering should be revealed if it exists" (Doran and Hodson 1975:182). Two criteria were employed to determine which cluster solution resulted in a global optimum. First, no more than 11 clusters were considered, as it was determined that more than this number of clusters would become unwieldy for interpretations. The 10 cluster solutions (from 2 through 11 clusters) were produced and the second criterion, the mean F-ratio, was applied.

F-ratio scores are produced by the PKM program for each variable. F-ratios are the between-cluster error divided by the within-cluster error (where error equals the squared Euclidean distance). All 22 between-cluster mean squares were summed, and divided by the sum of all 22 within-cluster mean squares. This produces a single statistical value (mean F-ratio) which summarized the fit of that cluster solution to the data. These mean F-ratios were then graphed. The higher the mean F-ratio, the more accurate the fit of the cases into the clusters. Nine clusters exhibited the highest mean F-ratio. Furthermore, the increase in mean F-ratio from eight to nine clusters was the highest of all mean F-ratio differences. Given this result, it was decided that nine clusters represented the "best fit" of all those cluster solutions produced. A total of 317 of the 408 cases were assigned to one cluster (cluster 9) in this solution, representing over 77% of all cases. These cases were the low density areas (LDA). While statistically this was an accurate result, it was archaeologically desirable to obtain better definition of the cases in LDA, since it contained such a high percentage of the total. The LDA cases were reanalyzed, and subdivided further into subclusters, using the same approach as used in the initial

Table 4. Weighting values for variables

Variable Class	Total Count of Items	Weighting Value
Scattered FCR, shell bone	9828	1.00
Flakes/non-flaked lithics	3485	2.82
Small features (FCR and shell)	586	16.77
Housepits/Depressions	53	185.43

analysis. Subcluster solutions from two through five were produced for the division of cluster nine. Three subclusters were found to exhibit the "best fit", using mean F-ratio values. It is important to note that the clusters produced by this reanalysis should be interpreted differently than those of the original nine clusters. A hierarchy of clustering was produced, wherein all nine original clusters are more different from each other than are any of the subclusters (produced for cluster nine). Thus, the actual solution involves nine clusters, one of which has been further subdivided into three sub-clusters. It is not correct to statistically equate this solution to that of 11 clusters (8 original and the 3 subdivisions of cluster nine). The case membership of these clusters is presented as Appendix C.

Production of Survey Maps

It was our objective during this project to graphically present the character of the landscape features in relationship to the observed cultural materials. This was achieved by compiling topographic sketch maps for both the east and west shores and the individual islands, and plotting the occurrences of the cultural material. Field maps illustrated the landform, sediment types, and the distribution of features and most artifacts including densities of shell and fire-cracked rock. The contour maps were drawn in the field as part of the survey process. Maps were drawn in 200 m sections (four 50 m units) as an approximate scale of 1 m:1 mm. One meter contours were estimated. Controls were limited to the horizontal plane; control points lay on north-south baseline oriented to true north. They were set every 50 m, measured by paces, and verified by tying-in to USGS/COE triangulation stations. The control points were set prior to initiation of the survey. In general, semipermanent markers were set at every eighth control point.

A major aspect of the analysis phase of the project was the compilation of these sketch maps to make complete and continuous maps of the entire east and west shores and the individual islands. Landmarks between points tied in to the USGS/COE triangulation stations, and the triangulation stations themselves, were verified against, or revised from, U. S. Army Corps blue line maps and USGS topographic maps. Checks for accuracy were made on the numeration of the control points, continuity of contour lines, scale, and true north orientation. Artifact and feature types were color-coded on the maps in an effort to facilitate recognition during analysis. Individual field maps were spliced together to form separate maps for each island and the two shorelines. The total survey area was then represented by about 18 m of maps. These were next cut to sizes appropriate for reduction. They were photo mechanically transferred (PMT) to 75% of their original size, to a scale of about 100 m:1 inch. Following reduction, the maps were cut into 15 inch long sections and plotted on 13, 11 by 17 inch gridded sheets. The shorelines were oriented as to their relative north to south positions and the islands were placed in their relative north to south position and in relationship to the shoreline. The maps are to scale except for the east-west river dimensions which is distorted by a

variable amount. The distortion in the width of the river was necessary in order to present the final product on a reasonable number of pages.

Each sketch map sheet illustrates the base lines and control points or locational information. For the shorelines, baselines and control points are depicted along the outer edge of the survey area in a fashion similar to that commonly used to show a grid system. Locational information for the islands is presented differently. A gridded frame is drawn around each island and the baseline and control points are illustrated along the right-hand margin.

Reduction of the map size made it necessary to limit the number of cultural materials to be plotted, since we wanted to maintain a high degree of clarity and accuracy in the finished product. Therefore, only the following kinds of information were labeled or plotted on the maps printed in this report: landforms and control points, four tyes of FCR features, two types of shell features, two types of pit structures, rock alignments, and some "exotic" artifacts (e.g., projectile points, notched pebbles, and grooved cobbles). Artifact and feature densities, which could not be presented individually, are represented by "press-on" patterns that designate the type-area or clusters of survey units. The "press-on" patterns for the shorelines were placed along the water's edge. For the islands, the patterns were placed within the gridded frame around the islands. Thus, the type-areas were indicated adjacent to the survey units they represent and not on the units themselves. Following the complete plotting of information the maps were reduced again by the PMT process to 35% of their intially reduced size. This was done so that the maps could be placed on 8 1/2 x 11 inch pages. The final scale was about 200 m:1 inch.

In summary, it should be pointed out that there is some distortion with the maps in terms of their north/south orientation and the actual curvature of the Columbia River. The overall orientation is due in part to the simplified mapping procedures used in the field and partially to our attempt in the lab to simplify the presentation of the final product.

The maps, as presented (see Chapter 4) provide a visual reference for the density of cultural remains by their topographical setting. In short, they not only graphically display the descriptive results of our survey project, but they also effectively summarize the analytical results.

CHAPTER 4

RESULTS OF ANALYSIS

In this section we present the overall results of our analysis. Data are presented from two perspectives: (1) in terms of the general nature and distribution of materials, and (2) in terms of the classification and patterns of the area's cultural materials. The locational and landform divisions of the study area provide the stage for discussion of the nature and distribution of cultural materials (Figure 31). By discussion of the cultural materials in relation to their geographic and geomorphic setting, we can address both questions of activities and intensity of use in relation to readily definable spatial parameters. This in turn permits us to make statements regarding patterns of land use.

General Distribution and Nature of Cultural Materials

The distribution of cultural materials is examined initially in terms of their presence and absence within the survey units. Aboriginal and/or historic cultural materials are recorded in 874 (66.2%) of the 1,320 survey units. Of the 446 units without documented materials, 146 (32.7%) are in the southern portion of the shore survey area and within severely disturbed units, 218 (48.9%) are on the beach and low flat (BLF) zone of the islands, and the remaining 82 (18.4%) are scattered throughout the area surveyed. Cultural materials occurred most frequently (98.5%) within the beach and sand dune (BSD) landform and least often (51.6%) along the White Bluffs (WTB). Table 5 provides more specific data on the general distribution of cultural materials within the various landforms.

At this point it is necessary to reiterate that surface disturbances and high water levels placed limitations on the documentation of cultural materials. This was most apparent for the 16.7% of the survey area considered to be severely disturbed; in those areas even presence/absence documentation is questionable. Minor surface disturbances were much more widespread, but they did not affect appreciably the documentation of the cultural material distributions. About one-half (49.5%) of the 50 m units were surveyed during times of high water levels for the Columbia River and Wallula Lake. High water levels and, for that matter, dense vegetation limited visibility in parts of a given 50 m unit and probably restricted our ability to document various types of artifacts. Usually the recording of presence or absence of cultural materials in that unit was not affected and we have reasonably good information on the kinds of materials in the unit as a whole.

Our point here is to recognize that the overall survey conditions constrained documentation. In some cases those constraints

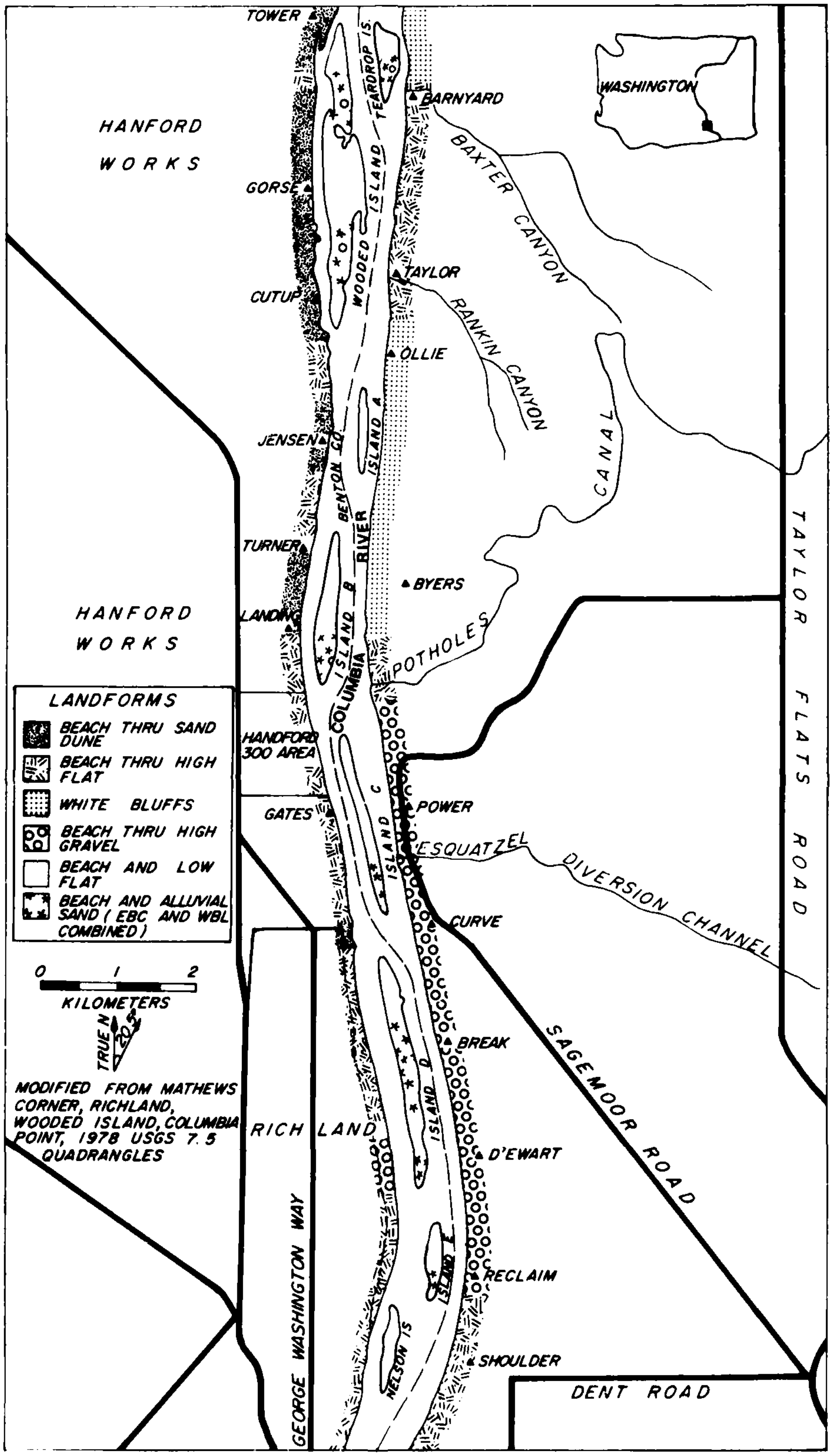


Figure 31. Generalized locational map of landforms in the study area.

Table 5. Presence and absence of cultural materials within all 50 meter survey units, by location and landform.

Location(n)/ Landform(n)*	Cultural Materials in 50 Meter Units			
	Present		Absent	
	(n)	%	(n)	%
Islands (614)	(347)	56.5	(267)	43.5
BLF(454)	(236)	52.0	(218)	48.0
EBC (80)	(69)	86.2	(11)	13.8
WBL (80)	(42)	52.5	(38)	47.5
West Shore (353)	(298)	84.4	(55)	15.6
BHF (200)	(153)	76.5	(47)	23.5
BHG (18)	(12)	66.7	(6)	33.3
BSD (135)	(133)	98.5	(2)	1.5
East Shore (353)	(229)	64.9	(124)	35.1
BHF (91)	(75)	82.4	(16)	17.6
BHG (167)	(105)	62.9	(62)	37.1
WTB (95)	(49)	51.6	(46)	48.4
Overall Totals (1320)	(874)	66.2	(446)	33.8

*Key for landform abbreviations

BLF: Beachs and low flats, east and west sides, islands
EBC: East beach through west cutbank, islands
WBL: West beach and low flat, islands
BHF: Beach through high flat, shores
BHG: Beach through high grand terrace, shores
BSD: Beach through sand dune, west shore
WTB: Beach to White Bluffs, east shore

preclude detailed analyses. It is for that reason that we exclude the 220 severely disturbed units from all but presence/absence analyses. Nonetheless, it is our opinion that the various kinds of cultural materials recorded adequately and accurately document the general nature and distribution of the study area's cultural resources as they are manifested on the contemporary surface.

Aboriginal Materials

Aboriginal artifacts and features represent the vast majority of cultural materials in the survey area. Included are pit structure (i.e., housepit), fire-cracked rock, mussel shell concentrations, rock alignments and cobble pile features, scattered fire-cracked rock, mussel shell, and bone, as well as an array of flaked and nonflaked lithics. A total of 14,150 such items representing 38 types of artifacts and features are recorded in our inventory list (Appendix B). That number is subject to the limitations previously noted (see Chapter 3). The 14,150 total number of items represents our most exhaustive breakdown of types of aboriginal remains. It includes the three types--rock alignments (ALGN), cobble piles (PILE), and scattered shell (SCSH)--that have questionable aboriginal affiliations. As previously stated, we are confident that inclusion of these types does not adversely affect the overall results. The breakdown of the various artifact and feature types is presented in Table 6.

It is readily apparent that the areas and landforms exhibit different densities and kinds of artifacts and features. We can quickly understand the basic distribution and densities of aboriginal materials by averaging the total number of items per 50 m survey unit within each of the location areas and landforms (Figure 32). This also provides a crude estimate of the intensity of aboriginal use of the various locations and landforms if we accept the assumption that increases in the quantity of materials roughly equate with increased use of an area.

The average number of items per 50 m unit in the study area's three general locations is as follows: (1) 7.9 items on the east shore; (2) 8.8 items on the islands; and (3) 16.9 items on the west shore. These figures clearly indicate that the west shore exhibits almost twice the density per 50 m unit as do the other two areas. In the most general terms, this provides useful behavioral information but it does not allow statements to be made concerning the relationship between densities and landforms. Figure 32 illustrates the relationships between average densities of aboriginal materials and landforms. A most interesting fact in the distributional analysis is that those landforms characterized by sandy sediments--EBC, BHF, and BSD--consistently yield higher densities of materials than do the landforms with gravelly sediments, namely the BLF, WBL, BHG, and WTB zones. The 50 m units within the landforms characterized by gravelly sediments constitute 61.7% of the overall study area yet they yielded only 32.8% of the total number of aboriginal materials. The disproportional relationship remains even when the severely disturbed units are excluded from calculations. Within the gravelly sediment landforms, average densities

Table 6. General distribution and frequencies of all recorded aboriginal materials and features.

Aboriginal Materials and Features	Location and Landforms of 50 Meter Units (1320)									Totals
	Islands (614)			West Shore (353)			East Shore (353)			
	BLF (454)	EBC (80)	WBL (80)	BHF (200)	BHG (18)	BSD (135)	BHF (91)	BHG (167)	WTB (95)	
FTA	48	14	24	59	--	83	16	5	2	251
FTB	67	80	46	16	--	20	2	--	--	231
FTC	6	28	8	7	--	1	--	--	--	50
FTO	--	16	--	7	--	1	4	--	--	28
SSH	7	1	1	4	--	3	--	--	--	16
BSH	--	--	--	7	--	1	1	-	1	10
DPRSS	--	28	--	11	--	--	--	--	--	39
HP	--	2	--	9	--	--	3	--	--	14
ALGN	3	1	1	30	--	4	--	--	--	39
PILE	108	19	5	3	--	10	3	1	11	160
NFLK	66	41	8	93	--	158	21	35	7	429
CFLK	219	6	--	49	--	68	37	--	--	379
CCORE	10	2	6	16	--	15	6	--	--	55
BTC	77	115	18	21	--	39	1	1	--	272
PKC	22	40	11	17	--	17	--	9	1	117
GRND	2	--	--	1	--	1	--	--	--	4
MFC	58	38	4	29	1	50	11	17	30	238
NCORE	30	33	10	32	--	46	6	12	6	175
NEM	12	5	1	13	--	13	--	4	--	48
NBIF	1	--	--	1	--	1	--	--	--	3
CEM	1	2	2	11	--	5	5	1	--	27
CBIF	--	1	--	3	--	2	3	--	--	9
PPT	--	1	--	3	--	1	1	--	--	6
UES	112	150	15	99	2	130	32	47	16	603
UMS	35	15	4	111	5	90	25	31	23	339
BES	33	35	9	37	2	66	14	12	8	216
BMS	34	22	2	66	1	47	12	14	10	208
UEB	50	11	4	14	--	20	4	3	4	110
UMB	12	2	2	27	1	12	3	3	2	64
BEB	22	5	9	11	--	24	3	4	6	84
BMB	24	3	3	12	--	11	3	1	2	59
NOTCH	12	8	2	2	--	2	2	2	1	31
GROV	1	4	1	3	--	--	--	--	--	9
BFCR	1688	781	424	1515	5	1909	1235	469	193	8219
DFCR	--	--	--	--	--	304	--	--	--	304
HFCR	--	256	--	220	--	--	83	5	8	572
SCSH	176	50	10	109	--	109	192	12	7	664
SCBO	23	1	--	19	--	11	16	1	1	71
Totals	2959	1816	630	2686	17	3274	1743	689	339	14,150

Table 6. Continued

*Key to materials and features abbreviations

FTA	: Dispersed FCR feature
FTB	: Discrete FCR feature
FTC	: Intact FCR feature
FTD	: Eroding FCR feature
SSH	: Surface shell feature
BSH	: Buried shell feature
DPRSS	: Depression, probable housepit
HP	: Housepit floor in cutbank
ALGN	: Rock alignment
PILE	: Cobble pile
NFLK	: Nonchert flake
CFLK	: Chert flake
CCORE	: Chert core
BTC	: Battered cobble
PKC	: Pecked cobble
GRND	: Ground stone
MFC	: Minimally flaked cobble
NCORE	: Nonchert core
NEM	: Nonchert, edge modified tool
NBIF	: Nonchert biface
CEM	: Chert, edge modified tool
CBIF	: Chert biface
PPT	: Projectile point
UES	: Unifacial cobble, sharp edge
UMS	: Unifacial cobble, battered edges
BES	: Bifacial cobble, sharp edge
BMS	: Bifacial cobble, sharp edges
UEB	: Unifacial cobble, battered edge
UMB	: Unifacial cobble, battered edges
BEB	: Bifacial cobble, battered edge
BMB	: Bifacial cobble, battered edges
NOTCH	: Notched pebble
GROV	: Grooved stone
BFCR	: Beach/low flat zone, FCR density
DFCR	: Dune/slump zone, FCR density
HFCR	: High flat/cutbank, FCR density
SCSH	: Scattered shell density
SCBO	: Scattered bone density
BLF	: Beaches and low flats, east and west sides, islands
EBC	: East beach through west cutbank, islands
WBL	: West beach and low flat, islands
BHF	: Beach through high flat, shores
BHG	: Beach through high gravel terrace, shores
BSD	: Beach through sand dune, west shore
WTB	: Beach to White Bluffs, east shore

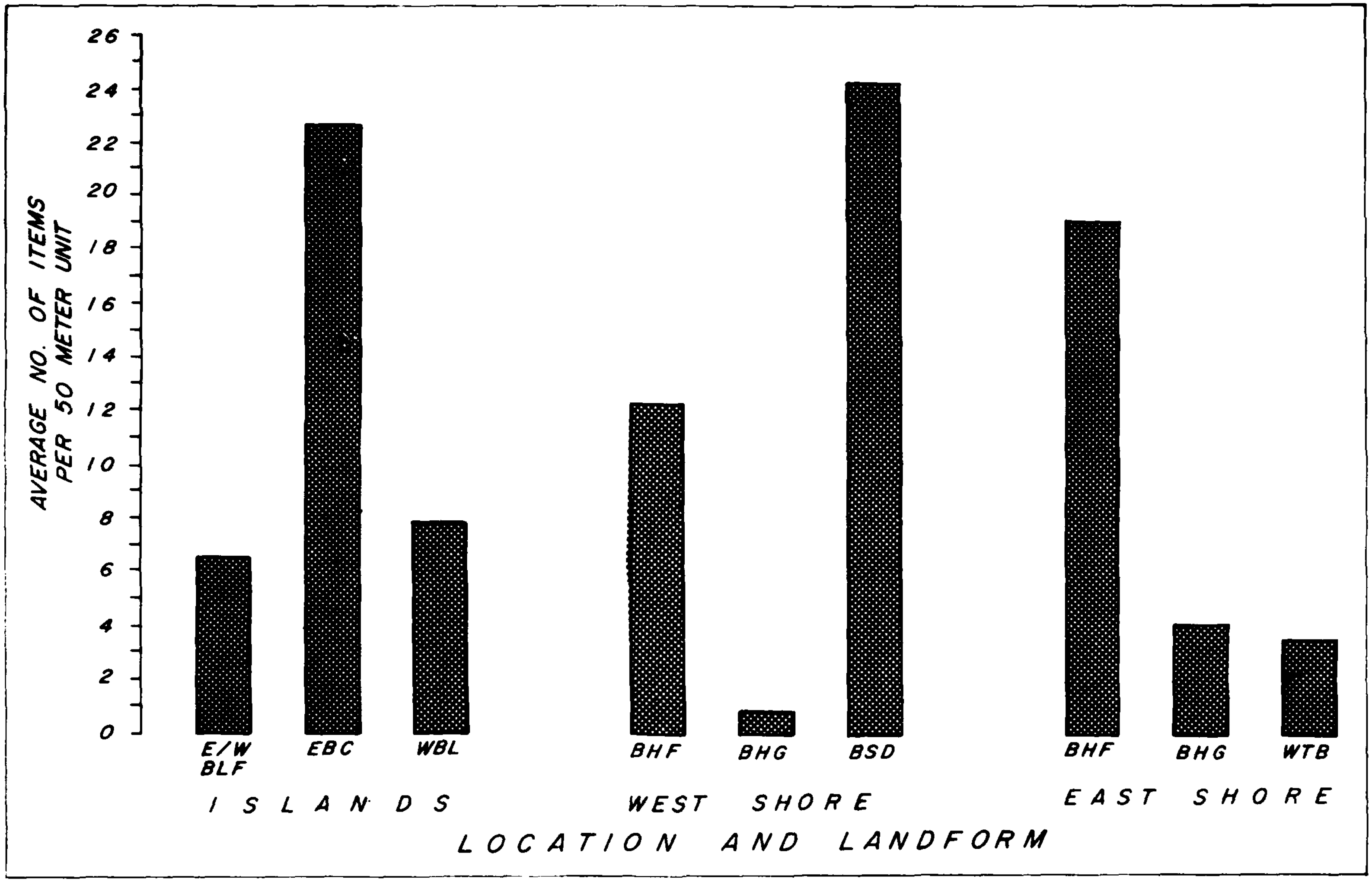


Figure 32. Bar graph of the average number of aboriginal items within all 50 meter survey units, by location and landform. (Key to abbreviations: E/W BLF, Beach and low flat, east and west side of islands; EBC, East beach through west cutbank, islands; WBL, Westbeach and low flat, islands; BHF, Beach through high flat, shores; BHG, Beach through high gravel terrace, shores; BSD, Beach through sand dune, west shore; WTB, Beach to White Bluffs, east shore.)

are highest on the islands' BLF and WBL landforms. By definition the west beach and low flat (WBL) units are adjacent to east beach through cutbank (EBC) units and thus are in close proximity to units with sandy sediments. It is apparent, as will be demonstrated later, that the beach and low flat (BLF) units with the highest densities of materials are also in close proximity to sandy sediment units. Thus, a clear pattern is present; the overwhelming majority of material items are found on or in close proximity to landforms with sandy sediments. By inference it is apparent that most activities resulting in the accumulation of material remains occurred in those areas.

Throughout the survey area there is considerable variation in the nature or fashion in which cultural materials are manifested. In other words, the appearance of artifacts and features varies across the landscape. Broad patterns are present in the distribution of the various manifestations of cultural materials. A brief summary of the kinds of manifestation familiarizes the reader with the general nature and distribution of aboriginal cultural materials. It also sets the stage for subsequent discussions. For purposes of this discussion we have defined three different manifestations of aboriginal cultural materials, these are: (1) areas of buried cultural materials; (2) areas of discrete surface features in conjunction with other artifacts; and (3) areas of scattered cultural materials.

Areas of buried cultural materials are distinguished by the presence of features (e.g., fire-cracked rock features or hearths, shell features, and housepits) and other materials exposed in cutbanks. Other materials include isolated occurrences of flaked lithics, nonflaked lithics, charcoal, shell, and bone fragments. Based on field observations, most of the features and artifacts appear to be in situ. Buried cultural materials regularly occur in the alluvial/aeolian sands on islands and in the high flats along the shorelines. In some cases they may occur under the dune slump that overrides the high flats. The cultural materials tend to be buried from 10 to 50 cm beneath the present surface, but in some cases materials are buried as much as 180 cm beneath the surface. Most cutbanks clearly reveal one cultural stratigraphic zone, although in several areas two or more cultural units may be present.

The presence of intact, discrete, and dispersed fire-cracked rock features as well as surface shell features characterize areas of discrete surface features. Other cultural materials, including flaked lithics, nonflaked lithics, scattered FCR, and shell, typically are spatially associated with, and frequently occur within, the discrete features. Areas of discrete surface features routinely occur in the low flat and beach zones of islands and along the shorelines. The number of FCR features in these areas can range from one to about 20 per 2,500 m^2. Some of our highest densities of flaked lithics and nonflaked lithics occurred in these areas. We consider these features to be essentially in situ or at least to have maintained their basic integrity and hence their spatial relationships with other features and artifacts. A variety of tentative evidence supports this contention. The gravelly, low flat surfaces upon which the features characteristically lie do not

appear to be eroded; rather, the sediments are close packed and have probably been stable for a long period of time. This, in turn, is suggested by the fact that the features themselves are very discrete and are not likely to have been much displaced from their original context. The beaches and low flats contain most of the discrete features and these zones are inundated annually by high waters. It is unlikely that the present "energy levels" of the Columbia River are sufficient to rapidly and routinely displace pebbles and cobbles the size of those constituting most FCR features. In other words, the river might be expected to displace a few rocks but not the entire feature. Credence is lent to this statement by the fact that even the alluvial/aeolian sand zones on the islands have maintained their basic configuration since the 1880s (Symons 1882). If the Columbia River has failed to markedly displace the sand zones, given the major floods of 1894 and 1948, it can hardly be expected to routinely displace pebble and cobble size particles.

Many locations in the survey area exhibit only cultural materials scattered on the surface. In such situations there is a dearth of features. Densities of flaked and nonflaked lithics vary greatly, but in general they co-vary with the densities of FCR. Most landforms and zones exhibit scattered cultural materials. The exceptions are the high flats of the shorelines and alluvial/aeolian sand zone of the island; in those locations materials are often buried.

Areas of scattered cultural materials are the most common in the survey area. As noted these areas characteristically lack discrete features, but areas of discrete features are interspersed throughout the survey area. We expect that some features were once present in the areas of scattered cultural materials, but they have been scattered, mainly as a result of mining activities, and erosion processes. It is possible that the scattered materials represent an earlier occupation of the area, but this is not too likely because the kinds of artifacts are similar to those in areas with discrete features.

The sand dune "blow-outs" present a special case of the areas of scattered cultural materials. Cultural materials on the dune surfaces along the west shore tend to occur in relatively high densities and are confined to discrete spatial areas (primarily in the "blow-outs") as opposed to being scattered thinly throughout the dunes. None of the observed materials appear to be in situ; rather, their present positions are probably caused by deflation of the dunes. It is probable that materials are buried well beneath the surface, but we found no discrete evidence of this.

Considerable variation is present among the eight islands and the two shorelines. Later in the text these differences are discussed in detail. At this point, we take the opportunity to briefly describe the general nature and distribution of cultural materials on each island and along the shorelines.

Island D (Figure 31) contains all of the manifestations characteristic of islands, but not necessarily present on individual

islands. The central portion of the island, near its southern end and in the middle, exhibits major alluvial/aeolian sand zones. Surface suggestions of housepits are present in the form of depressions and discrete vegetation patterns. A probable housepit is exposed in a cutbank of the central part of the island. It is evidenced not only by the thin basin shaped lense of darker sediments, but also by the presence of a central hearth area. The probable housepit floor indicates that the supposed superstructure (possibly mat coverings) covered a shallow depression as opposed to an excavated pit with sidewalls.

Areas of discrete surface features with relatively high densities of flaked and nonflaked lithic artifacts, as well as scattered shell fragments are present on the low flat zone in proximity to the buried features. These areas, in turn, tend to be surrounded by scattered cultural materials with varying densities of artifacts. Areas devoid of cultural materials are most apparent on the north end of the island.

Wooded Island (Figure 31) also exhibits two distinct alluvial/aeolian sand zones. Depressions representing probable housepits are evident only on the southernmost alluvial/aeolian sand zone. However, both zones exhibit buried cultural materials. Discrete surface features are present, but in comparatively low frequencies. Areas of scattered cultural materials are widespread.

Wooded Island was surveyed during times of highwater that effectively divided it into three large land masses and numerous small ones. As a result we were not able to examine all the surfaces that would normally be exposed. Numerous FCR features probably occur on the inundated beach and low flat zones. In fact, one site--45BN40--was recorded previously on the low flat (Figure 12), but that location was inundated during our survey.

Island B (Figure 31) is most similar to Island D and Wooded Island in that it exhibits a major alluvial/aeolian sand unit. Depressions representing probable housepits are present as are distinct vegetation patterns suggesting the presence of housepits beneath the surface. Only one instance of a housepit floor eroding from a cutbank is recorded. Numerous FCR features and other artifacts are buried in the alluvial/aeolian sand zone. Discrete surface features occur on the southwest and east central portions of the island. Areas of scattered cultural materials, generally lacking discrete features, are widespread. Density of cultural materials decrease from south to north. The north end of the island, as well as most of the surface of the alluvial/aeolian sand zone, is devoid of cultural materials.

Island C (Figure 31) lacks a major alluvial/aeolian sand zone, despite the fact that it is comparable in size to islands B and D. However, it does have a small alluvial/aeolian sand zone. While there are a few small areas with discrete surface features, sound evidence for the presence of housepits is lacking. Only the southern end of the island exhibits considerable quantities of scattered, flaked and

nonflaked lithics, shell fragments, and FCR. Overall density is much lower than on islands "B" and "D." The northern half of Island C is characterized as largely devoid of cultural materials.

Tear Drop Island (Figure 31) was surveyed during times of high water; this, in effect, significantly reduced the size of the island. Highwaters probably inundated the one previously recorded site, 45FR27, on the island.

Tear Drop Island is most similar to Island "C" in that it too contains only a small alluvial/aeolian sand zone. The central part of the island exhibits a single FCR feature; scattered FCR, shell and flaked and nonflaked lithics are present in relatively low frequencies. Most of the island was devoid of cultural materials. It is likely that some cultural materials are buried in the alluvial/aeolian sand zone. However, we did not find direct evidence to support this contention.

The most obvious characteristic of Island E (Figure 31) is that it has been subjected to extensive and intensive relic collecting, including pit digging. Although this relatively small island contains an alluvial/aeolian sand zone, most of it has been destroyed by relic collectors presumably in their search for exotic artifacts associated with burials (Cleveland et al. 1976). Several discrete FCR features are present on the west side of the island near its southern end. There is a possibility that some areas (the west-central portion) of buried cultural deposits have been protected from the relic collectors by the presence of relatively high sand dunes that may cap alluvial units. The kinds of flaked and nonflaked lithic artifacts are similar to those on other islands. While densities of artifacts are relatively high and some rare items are present, including blue glass beads and copper fragments, the extent of relic collecting and modifications of the surface have reduced, but not eliminated, the island's archaeological research potential.

Based on information provided by local informants Nelson Island (Figure 31) was an island, prior to the construction of McNary Reservoir, only during times of seasonal high water. It is now a relatively small island; it has only very minor areas of alluvial/aeolian sands that may contain buried cultural materials. Evidence for probable housepits is lacking, but in some places along the west side of the island FCR features are eroding from the sand unit. The "island's" original beach zone and much of the low flat are now below the normal pool level (340 feet a.s.l.) of McNary Reservoir. Discrete surface features are present along what is now the beach zone but was the low flat. They are also present on surfaces now covered by as much as 1 m of water. Small areas of discrete surface features also occur in the central portion of the island where thin, discontinuous sheet sands overlie the pebble and cobble surface upon which the FCR features occur.

Island A (Figure 31) is the smallest of those surveyed. During seasonal high water only the tops of the small willows on the island are visible. It is a mid-channel gravel bar that lacks a significant

alluvial/aeolian sand zone. The only indisputable aboriginal artifact is a grooved cobble ("canoe weight") recorded on the northern tip of the island.

The west shore (Figure 31) exhibits the various manifestations of cultural materials particularly along its northern half. Materials are most abundant on the BSD and BHT landforms. Areas of buried cultural materials, discrete surface features, and areas of scattered cultural materials represent an almost continuous distribution of cultural resources. Densities of materials range from low to high. In addition, evidence of extensive and intensive mining activities is widespread. Remains of several farmsteads are also present along the west shore. The southern part of the west shore is largely disturbed and exhibits only scattered cultural materials. That portion contains the BHG landform as well as examples of the BSD and BHT landforms. We suspect that materials were once abundant on the latter two landforms but have since been destroyed by residential and industrial developments.

The landforms along the east shore are primarily those characterized by gravelly sediments, namely the WTB and BHG landforms (Figure 31). However, both the northern and southern parts of the east shore have some BHT landforms. While all of the manifestations of cultural materials are present, densities are much lower in comparison to the west shore. Furthermore, the distribution of materials is less continuous on the east shore than on the west shore. Areas of discrete features tend to be situated on the BHF landform as do areas with buried cultural materials. There is also a tendency for smaller areas of discrete features to be located near the mouths of larger gullies that cut through the BHG landform to the Columbia River. In general, thinly scattered flaked and nonflaked lithics, as well as FCR, are characteristic of most of the east shore.

Most of the cultural materials recorded in the survey area appear to be characteristic of the late prehistoric and perhaps historic time periods. In the phase terminology, the bulk of the materials are readily assignable to the Cayuse and/or Historic phases, ca. 2,500 to 150 years ago (Galm et al. 1981; and others). Some of the projectile points (Figure 23) are similar stylistically to those traditionally associated with earlier phases. However, we are reluctant to assign much significance to half a dozen projectile points in the light of other evidence.

The human groups who utilized the area undoubtedly are representative of those whose adaptive strategies included winter, sedentary forms of land use (ca. 3,500 B.P.-1730 A.D.), and/or those who could be more mobile largely as a result of the introduction of the horse in the early 1700s (Schalk 1980b:29-41). Our evidence for this statement rests primarily on the fact that housepits and glass beads are recorded in the project area. Others, of course, have long since recognized this (e.g., Drucker 1947; Rice 1968b). We argue, however, that most of the cultural materials were probably deposited within a much shorter period of time. A lack of well-developed soils and an

apparent rapid rate of fluvial deposition have already been presented as reasons for believing the sediments in which cultural materials occur are relatively young. Similar sediments have been dated on Strawberry Island and are, indeed, young. Judging on the basis of date of 2,472± 110 B.P. on the lower most sands at nearby Strawberry Island (Mierendorf 1981:77), the cultural materials in the study area that occur only a few centimeters beneath the 1894 flood deposits (ca. 10-30 cm thick) are likely to be much younger than the lower sand unit of Strawberry Island. Support for our contention that most of the cultural materials observed in the study area are relatively young and buried at shallow depths also comes from test excavations conducted some 25 mi upsteam, near Vernita, Washington. According to David Rice (personal communication, November 1982), the six tested sites were similar to those in our survey area in terms of types of material and depositional context. Almost all of the cultural material was buried at shallow depths and there was considerable congruity between what was observed on the surface and recovered from excavation units. Furthermore, cultural materials considered to be more than 6,000 or 7,000 years old were neither recovered from any of the 40-50 test pits, nor observed in any of the private artifact collections from the area.

The buried cultural materials in the study area exhibit little evidence of noncultural disturbance and unconformities are not readily apparent. If we assume a relatively constant rate of fluvial deposition and consider that most of the buried materials lie between 30 and 100 cm beneath the surface, it could be argued that they are considerably less than 1,000 years old. In support of the stable natural conditions, we would also point out that many of the surface (FCR) features are relatively intact. The majority of these features are in the low flat zones that are subject to periodic flooding. In these areas one would not expect fist-size rocks to stay in place much more than several hundred years; neither would one expect them to have been subjected to much lagging and still retain their relatively discrete configurations. These arguments, coupled with the fact that the kinds of cultural materials on the whole exhibit little technological or morphological variation from area to area or within areas, provide a strong indication that much of the cultural material was deposited in a relatively short period of time.

To summarize, we employ the arguments of poor soil development, rapid deposition, and homogeneity in cultural materials to suggest that much of the utilization of the study area occurred within a relatively short period of time. Thus our working hypothesis is that much of the activity represented by the materials was more-or-less archaeologically contemporary. We would suggest that the majority of materials indicate utilization of the area approximately during the last ,1000 years. The lower limiting dates of 2427±110 B.P. from nearby Strawberry Island lends credence to this suggestion. It is, however, likely that some materials may eventually be assigned to slightly earlier time periods. More definitive statements concerning chronology must await the results of future excavations.

Historic Materials

In our use of the term historic materials are those items manufactured by individuals of nonaboriginal origin. This does not mean, however, that they were not used by Native American groups. As noted earlier, the presence of glass beads in areas with flaked and nonflaked lithics is evidence for historic use of the area by aboriginal populations. For instance, the blue glass beads and several small copper fragments from Island E were recorded in areas that had been intensively "pot hunted". These beads probably had been associated with several burials (45BN181) on the island (Cleveland et al. 1976). Rice (1968b) reports blue glass beads from 45BN167, also a previously recorded site along the west shore and south of Wooded Island. We also discovered a single blue-glass faceted bead immediately north of our survey area on the west shore.

There are several places on the BSD landforms that also may be indicative of historic period use of the area by aboriginal populations. We recorded fire-cracked rock, pecked cobbles, a few flaked lithics, and soldered-seam tin cans in several discrete areas. These items were found on the sand dunes, but in low-lying areas. While it is little more than speculation, we suggest that these materials may be indicative of the late nineteenth/early twentieth century occupation of the area by Wanapam Indians (Rice and Chavez 1980; Smith 1982). Most of the other scattered historic items (e.g., tin cans, bottles, and wooden planks) are not obviously associated with historic features or aboriginal artifacts and were probably transported to their present locations by flood waters.

Several classes of historic resources indicative of activities by nonaboriginal groups are also present in the study area. These are the mining features, probable homesteads, and other structural remains. Turn-of-the-century historic items are also scattered throughout the area. Most evidence for late nineteenth and/or early twentieth century utilization is along the west shore. Table 7 summarizes the distribution of recorded historic resources by location and landform.

The most common and best represented kind of historic resource in the survey area is the mining feature. As noted previously, areas of extensive and intensive mining can be delineated by the kinds of features occurring in a specific location. On the whole, these mining features appear to retain their original integrity. An area of intensive mining is distinguished by the presence of closely spaced depressions, linear and curvilinear chutes or shallow ditches, as well as circular, linear, and curvilinear piles or concentrations of cobbles and boulder size rocks. Linear arrangements of large cobbles and boulders are also characteristic. In these areas, almost all of the original surface is disturbed by mining activities. Aboriginal artifacts and features are rare or absent. Other than heavy gauge wire, historic artifacts do not occur in noticeably greater frequencies than they do elsewhere. Intensive mining areas occur exclusively on the beaches and low flat zones of the northern portion of the west shoreline.

Table 7. General distribution and relative frequencies of survey units with historic materials and features.

Type of Historic Features and Scatter	50 Meter Survey Units (n, %) with Historic Materials*																		Overall Totals (1320 units)	
	Islands (614)						West Shore (353)						East Shore (353)							
	BLF (454)		EBC (80)		WBL (80)		BHF (200)		BHG (18)		BSD (135)		BHF (91)		BHG (167)		WTB (95)			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Mining	5	1.1	-	-	-	-	81	40.5	-	-	86	63.7	7	7.7	5	3.0	1	1.1	185	14.1
Structure	-	-	1	1.3	-	-	4	2.0	-	-	1	0.7	-	-	1	0.6	1	1.0	8	0.5
Dump	-	-	-	-	-	-	-	-	-	-	4	3.0	-	-	-	-	-	-	4	0.3
Scatter	1	0.2	1	1.3	1	1.3	37	18.5	-	-	21	15.6	1	1.1	4	2.4	4	4.2	70	5.3

*Key to landform abbreviations
- BLF: Beachs and low flats, east and west sides of islands
- EBC: East beach through west cutbank, islands
- WBL: West beach and low flat, islands
- BHF: Beach through high flat, shores
- BHG: Beach through high gravel terrace, shores
- BSD: Beach through sand dune, west shore
- WTB: Beach to White Bluffs, east shore

The mixture of mining features and aboriginal cultural materials, coupled with the fact that substantial portions of the surface are not greatly disturbed, distinguish the extensively mined areas from the intensively mined ones. Dispersed FCR features are the most common aboriginal feature in these areas, but some discrete FCR features are present. The density of FCR, flaked and nonflaked lithics, and scattered shell fragments vary greatly. Mining features are similar to those in the intensively mined areas, but they are more widely spaced. Historic artifacts, other than the heavy gauge wire, do not appear to be concentrated more so than elsewhere. Areas of extensive mining and cultural material occur in the beach and low flat zones of the east and west shorelines and to a very limited extent on Nelson Island. In general, extensive and intensive mining features occur on large gravel bars and particularly in the boulder/cobble fields.

With regard to the chronological placement of mining activities we did not recover artifactual evidence that allows us to assign the mining remains to activities resulting from the 1864 "gold discovery" at Ringold Bar (Lyman 1919), located several miles upstream from our survey area. According to Lyman (1919:279) both "White" and "Chinese" miners worked the bar. Despite efforts to discover historic artifacts that could be related to early mining activities, we found neither definite Chinese artifacts nor any other mining-related artifacts that could not be assigned readily to mining activities that may have occurred during the late nineteenth and/or early twentieth centuries.

Mining-related artifacts are present, particularly along the west shore. The perforated rectangular metal sheets recorded along the west shore are probably part of rocker-hoppers used to separate fine sediments from coarser ones as part of a placer mining process (Wynne 1964). We think the heavy gauge coiled wire represents the remains of wooden culverts or pipes that probably carried water to the placer mines. Similar kinds of wire were commonly used to hold in place the wooden slats that formed the pipes. These kinds of items are not limited to the 1860s or 1880s; they could have been used over much of the historic period.

Some of the mining activities probably did occur around and after the turn-of-the century. However, placer mines are not documented in the study area or vicinity during that time period (Huntington 1956; Washington State Department of Natural Resources 1971). Since record keeping was not systematic during the mid-1800s, and mining activities probably occurred later (including during the Great Depression) even though claims were not filed, we are inclined to believe that both time periods are probably represented in the study area.

The remains of seven collapsed or razed structures were recorded in the study area. One of the historic structures occupies two 50 m units. Five of the six homesteads or farmsteads were probably occupied as recently as the early 1940s when most structures along the west shore were razed, marking the beginnings of the Hanford Nuclear Project (Rice and Chavez 1980). One farmstead is located on Wooded Island, where the remains of a cellar, wooden construction materials, a metal bed frame,

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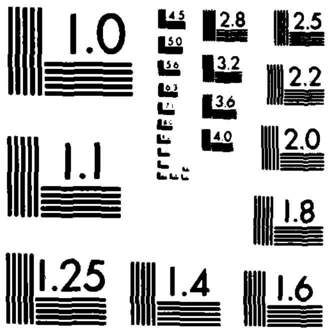

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

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	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Mining	5	1.1	-	-	-	-	81	40.5	-	-	86	63.7	7	7.7	5	3.0	1	1.1	185	14.1
Structure	-	-	1	1.3	-	-	4	2.0	-	-	1	0.7	-	-	1	0.6	1	1.0	8	0.5
Dump	-	-	-	-	-	-	-	-	-	-	4	3.0	-	-	-	-	-	-	4	0.3
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and scattered tin cans were documented. Two other homesteads are located on the west side of Wooded Island. One of these has a concrete foundation, associated automobile parts, and wooden construction materials, as well as scattered fragments of tin cans and glass. The other is clearly an intentionally razed structure represented by a pile of burned wood and household items adjacent to the remains of a cellar. Associated with this structure are a fenced garden area, scattered tin cans, ceramic and glass fragments, and a portion of what may have been a mechanical grinding wheel (Figure 29). The other two historic structures on the west shore are located south of the 300 Area, represented by concrete foundations and scattered tin cans, ceramic and glass fragments.

Two historic structures were recorded along the east shore. One of these is represented by the remains of a late nineteenth/early twentieth century pump station foundation (Figure 30) and scattered tin and glass fragments. Several abandoned and severely disturbed irrigation ditches were recorded south of the foundation in the high flat zone. The pump station is labeled on the 1951 Corps of Engineer's topographic map as "Old Pump House Foundation, Irrigation Canal." Interestingly, the 1908 updated version of Symon's 1882 map of the Columbia River (Chittenden 1912:sheet 42) locates the "Norman Irrigation Plant" about a mile north of our foundation. We failed to find any structural remains where the "Plant" is located on the 1908 map. At present, we can only suggest that the "Old Pump House Foundation, Irrigation Canal" is one and the same as the "Norman Irrigation Plant." Our literature review did not yield any additional information regarding the structure. There is one other abandoned pump station and there are numerous irrigation canals that empty into the Columbia River on the east shore, but all of these are very recent and/or reconstructed. They probably date from the 1940s to the 1970s.

The other historic structure is immediately east of the survey area. It is located adjacent to Sagemore Road and across the river from Island C. The area exhibits the remains of a masonry lined dugout; its associated scatter of soldered-seam tin cans impinges on the survey area. These materials probably date to sometime during the late nineteenth and/or early twentieth centuries. Since the structure lies outside the survey area we merely documented its location.

The numerous small trash dumps recorded along the west shore in the BSD landform contain a variety of 1930s to 1940s trash, including flashlight batteries, tin cans (e.g., containers for tomato paste, sardines, milk, and tobacco), ceramic and glass fragments. These dumps are confined to small areas, usually less than 10 m in diameter, and they tend to be immediately above areas that have been mined. The concentration of historic garbage may represent only the trash dumps of the local population. We also speculate that they could represent the remains of Depression Era camps occupied by individuals engaged in placer mining (Merrill et al. 1937).

In summary, the historic resources of the study area are indicative primarily of the placer mining period of local history.

Although the agricultural and irrigation periods are also represented, the remains of these kinds of activities tend to be in very poor condition. In other words, they fail to exhibit integrity of design even though they retain their original locations.

Classification and Patterns of Aboriginal Cultural Resources

Classification of the study area in terms of the distribution of cultural materials permits us to group similar kinds of manifestations and make comparisons among them. In this manner we can better understand the possible behaviorial relationships among the kinds of manifestations and/or between kinds of materials and their topographic setting. With these kinds of information we can then proceed to offer explanations for the observed differences and similarities.

In this subsection we discuss several patterns detected in the regrouped data set. We also provide some background information that sets the stage for discussion of the results of the cluster analysis. The total number of survey units and artifacts/feature types was reduced so as to facilitate computer manipulation (see Chapter 3). This was accomplished in part by: (1) combining similar artifact and feature types, (2) eliminating the ALGN and PILE features, and (3) combining similar landform types. Table 8 compares the exhaustive and regrouped data sets. Additionally, all severely disturbed units were eliminated and adjacent 50 m survey units within the same landform were combined into 100 m units. We also were able to examine the regrouped data in terms of correlation coefficient and overall frequencies for the 22 variables within landforms before combining two adjacent 50 m survey units for purposes of the cluster analysis.

The overall distributions and frequencies of aboriginal materials and artifacts are relatively similar for both the exhaustive (Table 6) and the regrouped data (Table 9). In regrouping, we employed only the highest FCR density estimate for one of the two 50 m units; the lowest density estimate was eliminated. The approach was also used for the scattered shell and bone densities. In other words, only the highest of two density estimates (one for each 50 m unit) is used to characterize a given 100 m unit. The net result is that the total number of items is reduced to approximately 4,000. Other totals remain similar, considering that some types of features and artifacts were combined (see Chapter 3).

Comparisons between the exhaustive and regrouped data sets in terms of average number of items per 50 m units within the study area's three general locations are as follows: (1) 7.9 and 8.6 on the east side, respectively; (2) 8.8 and 12.3 on the islands, respectively; and (3) 16.9 and 16.9 on the west shore, respectively. The relationship between average material densities and landforms is also quite similar for the exhaustive (Figure 32) and regrouped (Figure 33) data sets. Much higher material densities still occur on landforms characterized by sandy sediments than on those with gravelly sediments. Interestingly,

Table 8. Summary and comparison of the exhaustive and regrouped types and variables

Exhaustive Types and Variables for Inventory Lists and Others	Regrouped Types and Variables for Cluster and Other Analyses
Features	
FTA, FTB, FTC, FTD	RHF: Firecracked rock and hearth features
SSH, BSH	SCF: Shell concentration features
DPRSS, HP	PSF: Pit structure features (i.e., housepits)
ALGN, PILE	Deleted from consideration
Artifacts	
NFLK, CFLK, CCORE	Unchanged flaked lithic types
HTC, PKC, GRND	Unchanged non-flaked lithic types
MFC, NCORE	NCC: Non-chert cores and core-like types
NEM, NBIF	NMT: Non-chert modified flakes and tools
CEM, CBIF, PTT	CMT: Chert modified flakes and tools
UES, UMS	UCS: Unifacial cobbles with sharp edge(s)
BES, BMS	BCS: Bifacial cobbles with sharp edge(s)
UEB, UMB	UCB: Unifacial cobbles with battered edge(s)
BEB, BMB	BCB: Bifacial cobbles with battered edge(s)
NOTCH, GROV	NGS: Notched and grooved stones
Density Estimates	
BFCR	Unchanged, FCR density in beach zone
DFCR	Unchanged, FCR density in sand dune zone
HFCR	Unchanged, FCR density in high, non-dune zone
SCSH	Unchanged, overall shell scatter
SCBO	Unchanged, overall bone scatter
Landforms	
Islands	
East BLF, West BLF	BLF: Beaches and low flat
EBC, WBL	BAF: Beaches and high alluvial flat
West Shore	
BHF	Unchanged, beach through high flat
BHG	Deleted from consideration
BSD	Unchanged, beach through sand dune
East Shore	
BHF	Unchanged, beach through high flat
BHG	Unchanged, beach through high gravel terrace
WTB	Unchanged, white bluffs, beach through slope

Table 9. Distribution and frequencies of regrouped aboriginal materials and features within regrouped landforms.

Aboriginal Materials and Features	Location and Landform														Totals	
	Islands				West Shore				East Shore							
	BLF		BAF		BHF		BSD		BHF		BHG		WTB			
	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)
RHF	6.5	124	12.3	230	4.7	95	4.4	110	1.9	22	0.9	4	0.8	2	5.8	587
SCF	0.4	7	0.1	2	0.6	11	0.2	4	0.1	1	--	--	0.3	1	0.3	26
PSF	--	--	1.6	30	1.0	20	--	--	0.2	2	--	--	--	--	0.5	52
NFLK	3.5	67	2.6	49	4.7	94	6.4	159	1.8	21	7.5	33	2.6	7	4.2	430
CFLK	12.1	231	0.3	6	2.5	50	2.8	69	3.1	37	--	--	--	--	3.9	393
CCORE	0.5	10	0.4	8	0.8	16	0.6	15	0.5	6	--	--	--	--	0.5	55
BTC	4.1	79	7.3	136	1.0	21	1.6	39	0.1	1	0.2	1	--	--	2.7	277
PKC	1.3	25	2.9	54	0.9	18	0.7	18	--	--	1.8	8	0.3	1	1.2	124
GRND	0.2	4	--	--	0.1	1	--	1	--	--	--	--	--	--	0.1	6
NCC	5.0	95	4.6	86	3.0	61	3.9	97	1.3	16	6.1	27	12.4	33	4.1	415
NMT	0.7	14	0.3	6	0.8	15	0.5	14	--	--	0.9	4	--	--	0.5	53
CMT	0.1	1	0.3	6	0.8	16	0.3	8	0.8	9	0.2	1	--	--	0.4	41
UCS	7.9	151	9.9	185	9.7	195	8.7	218	4.8	57	15.3	67	15.0	40	9.0	913
BCS	3.7	70	3.7	69	4.9	98	4.6	116	2.1	25	4.6	20	6.8	18	4.1	416
UCB	3.5	66	1.0	19	2.0	41	1.4	34	0.5	6	1.1	5	1.9	5	1.7	176
BCB	2.5	48	1.2	22	1.2	24	1.5	37	0.4	5	1.3	5	3.0	8	1.5	149
NGS	0.7	13	0.8	15	0.3	5	0.1	2	0.2	2	0.2	1	0.3	1	0.4	39
BFCR	41.2	785	37.8	705	48.3	968	50.0	1246	64.4	758	56.5	248	50.7	135	47.7	4845
DFCR	--	--	--	--	--	--	8.0	199	--	--	--	--	--	--	2.0	199
HFCR	--	--	9.7	181	7.9	159	--	--	5.3	62	0.7	3	3.0	8	4.1	412
SCSH	5.3	101	3.1	57	3.9	78	3.9	97	11.1	131	2.5	11	2.6	7	4.7	481
SCBO	0.8	16	0.1	1	0.9	17	0.4	11	1.4	16	0.2	1	0.3	1	0.6	62
Totals	100	1907	100	1866	100	2002	100	2494	100	1177	100	439	100	266	100	10,149

*Key to landform abbreviations:

- RHF : Fire-cracked rock or hearth feature
- SCF : Shell concentration feature
- PSF : Pit structure (i.e., housepit) feature
- NFLK : Nonchert flake
- CFLK : Chert flake
- CCORE: Chert core
- BTC : Battered cobble
- PKC : Pecked cobble
- GRND : Ground stone
- NCC : Nonchert cores and core-like types
- NMT : Nonchert modified flakes and tools
- CMT : Chert modified flakes and tools
- UCS : Unifacial cobbles, sharp edge(s)
- BCS : Bifacial cobbles
- UCB : Unifacial cobble, battered edge(s)
- BCB : Bifacial cobble, battered edge(s)
- NGS : Notched and grooved stone
- BFCR: Beach/low flat zone, FCR density
- DFCR: Dune/slump zone, FCR density
- HFCR: High flat/cutbank, FCR density
- SCSH: Scattered shell density
- SCBO: Scattered bone density
- BLF : Beaches and low flat; islands
- BAF : Beaches and high alluvial flat; islands
- BHF : Beach through high flat, shores
- BSD : Beach through sand dune, west shore
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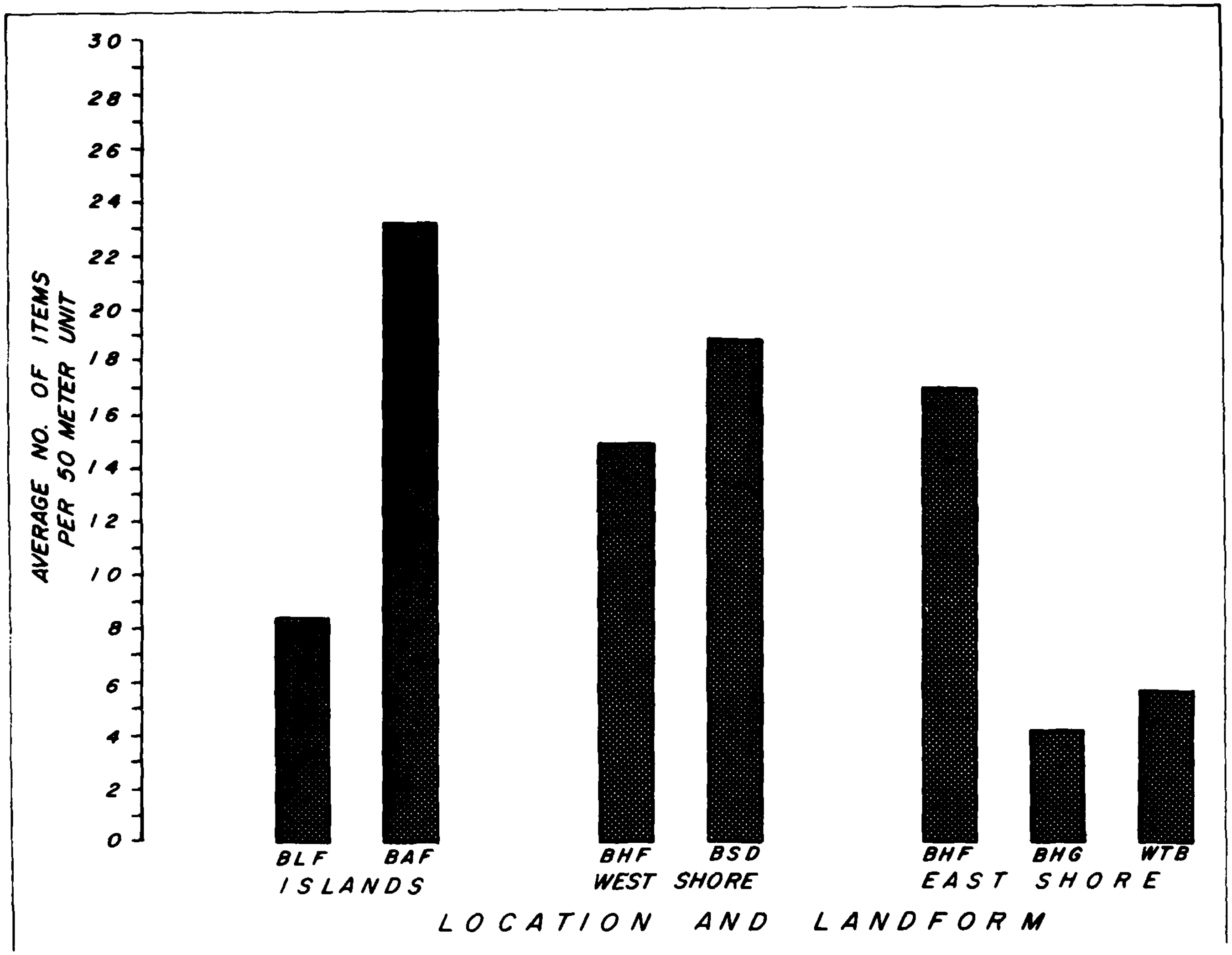


Figure 33. Bar graph of the average number of aboriginal items within undisturbed 59 meter survey units, by location and landform. (Key for abbreviations: BLF, Beaches and low flat, islands; BAF, Beaches and alluvial flats, islands; BFH, Beach through high flat, shores; BSD, Beach through sand dune, west shore; BHG, Beach through high gravel terrace, east shore; WTB, Beach to White Bluffs, east shore.)

the regrouped data set indicates that, on the average, the most dense concentrations of cultural materials occur on the island's beach and alluvial flat (BAF) landform. In the exhaustive data set the beach through sand dune (BSD) landform exhibits the highest density. That difference is the result of combining the EBC and WBL island landforms to form the BAF landform. The combined BAF landform density figure more accurately reflects our field observation. Namely, the islands with a major sandy alluvium unit exhibit the highest density of cultural materials in the survey area. Our point here is to illustrate that the regrouped set accurately reflects the overall nature and distribution of cultural materials in a more parsimonious fashion than does the exhaustive set. For that reason we rely upon the regrouped data set for the bulk of our analysis and interpretations.

Landforms and Kinds of Cultural Materials

We have established that there are major differences in the densities of cultural materials in relation to landforms in the study area. It is also of interest to determine whether or not there are differences in the kinds of cultural materials present in relation to the landforms. The relative frequency information presented in Table 9 provides a means to address the question. Attention is drawn to the fact that the estimated density of scattered FCR in the dunes (DFCR) and on the highest flats (HFCR) are not readily comparable across all landforms because neither the dune zone nor the highest flat zone are present on all forms. All other variables are comparable across landforms since each could occur in any frequency within any landform.

The reader is reminded that only one landform designation was assigned to each 50 m unit. When two different landforms occurred in one 50 m unit, we systematically applied the same criteria in assigning the unit to one landform (see Chapter 3). Furthermore, in grouping two adjacent units to form a 100 m analytical unit, only those within the same landform were combined. In other words, we attempted to minimize the possibility of analytical units cross-cutting landforms.

The overall impression is that relative frequencies of kinds of variables (i.e., features and artifacts) are remarkably similar among landforms. Differences among landforms of more than 20 percentage points are present only in the case of estimated density of beach zone fire-cracked rock (BFCR). Those differences are related partially to the degree of disturbance. Island landforms are the least disturbed by mining and other surface altering agents and they have the highest percentage of fire-cracked rock and hearth features (RHF). This suggests that much of the FCR which would otherwise be scattered is retained within features on the islands. In other words, if more of the FCR features on the islands were scattered, as they apparently were on the shorelines, one would expect that the relative frequencies for BFCR would approximate 50% as they do on all other landforms.

Differences on the order of 10 percentage points are more prevalent, but they are observed for only five variables--BFCR, CFLK,

NCC, RHF, and UCS--and two of these (BFCR and RHF) are in part percentage related to disturbance processes already noted. The unusually high number of chert flakes (CFLK) in the beach and low flat (BFL) island form has an obvious explanation; 198 of 231 flakes are from two adjacent 50 m units on Island D. If these are removed on the grounds they represent an extraordinary area, the remaining flakes constitute 1.7% of the BLF items and that figure is compatible with the others. Differences in the relative frequencies of the nonchert cores (NCC) and unifacial cobbles with sharp edges (UCS) are probably related to broader patterns that are discussed later. At this point, it suffices to note that comparatively high percentages of NCCs, and UCCs on the gravelly sediment landforms (BHG and WTB) of the east shore may indicate that those areas were utilized as quarries or sources for lithic raw materials more so than were other landforms.

There are at least two other variables--BTC and SCSH--that have notably disproportionate ranges in their means. Battered cobbles (BTC) are present in an unusually high frequency on both island landforms, and scattered shell (SCSH) is comparatively much more dense on the beach through high flat (BHF) landform of the east shore. It is likely that these differences indicate that the activities represented by BTCs (e.g., food processing) and SCSHs (e.g., shellfish procurement) were relatively more common than elsewhere. There are other less obvious, but apparent, differences in the relative distribution of artifact and feature types across landforms. For example, pit structure features (PSF, i.e., housepits) are not recorded on landforms characterized by gravelly sediments, nor within the beach through sand dune (BSD) landform. Housepits in the study area are apparently confined to landforms distinguished by sandy alluvium. That pattern may indicate that the construction and maintenance of housepits is not practical in gravelly or aeolian sediments. Another example of minor but obvious differences is the near absence of chert artifacts--cores (CCORE), flakes (CFLK), and tools (CMT)--from the beach through high gravel terrace (BHG) and beach to White Bluffs (WTB) landforms of the east shore. Several factors probably account for these differences: (1) high water levels limited chances for their discovery; (2) there is comparatively little flat ground in those landforms, thus placing limitations on the kinds and intensity of activities that may have occurred there; and (3) the related factor that absolute frequencies of most items are lower on the BHG and WTB landforms.

On the whole and with the exception of pit structure features, the relative frequencies of artifacts and features across landforms are remarkably homogeneous. The suite of items that characterize the entire study area also characterizes the various individual landforms. Most readily apparent differences are in terms of degree or quantity; important differences may be present, but they are not manifested in major qualitative terms. If specific past human activities were confined to or tended to occur on certain landforms, major differences (i.e., much greater than observed in the study area) would be expected. If, for example, some areas were utilized primarily as quarries, a near absence of finished tools would be expected as would comparatively low frequencies of food items or food processing tools. Alternatively, if

the butchering of large game animals was confined to some landforms, high percentages of scattered bone would be likely in those areas. However, major differences of these kinds are rare in our sample. We expect that differential use of the landscape is manifested in the study area, but the differences are probably more quantitative than qualitative. To extract such differences from the data it is necessary to examine the minor variations in relative frequencies as well as differences in the relationships between specific artifacts and features. Some of these differences have already been pointed out. Most notable is the indication that the east shore, particularly the BHG and WTB landforms, may have been used more systematically as a quarry area, with river cobbles being the desired raw material. Those landforms in general appear to have been used less intensively than other landforms though perhaps for similar purposes.

The relationship between cultural materials and landforms is considered to represent an aboriginal pattern. This statement is made because landforms in the undisturbed part of the project area approximate their natural state. The primary effect of the construction of McNary Reservoir has been the innundation of some surfaces in the southern quarter of the survey area. Even there the water level has not been raised much more than 1 m. Although the landforms have been somewhat altered by small scale construction projects and mining operations, there is little evidence to suggest that overall relationships are an artifact of reservoir cosstruction or other major landscape altering construction activities. We also argue that most of the landforms are of Holocene age and have not been severely altered since they were occupied by late prehistoric aboriginal groups.

Cultural Materials and Subsistence Activities

Analysis and discussion of cultural materials in terms of the kinds of activities the items represent require certain assumptions. Artifact and feature types must be equated with function or at least some kind of generalized activity if we are to discuss the cultural remains as indicators of past human behavior. Such an effort is mandatory to address the questions outlined at the outset of this project and to go beyond the description of materials. Some of the assumptions we make are widely accepted and others are supported by the results of our analysis though not necessarily widely accepted. In short, we infer basic or general activities by utilizing our information and our ideas as well as those in the literature. Our approach begins with the idea that cultural materials in the study area are largely related to subsistence, chiefly a chain of activities from procurement to the preparation of food items for consumption or storage. Our working model is derived primarily from field observations and general literature regarding the behavior of human groups. The model encompasses four generalized activities that subdivide the subsistence chain, plus a fifth that denotes residence and/or storage. Subdivisions are as follows: (1) residence and storage; (2) procurement of food items (e.g., fi- , shellfish, mammals, vegetal materials); (3) manufacture [illegible] thi [illegible]ools for processing foodstuffs; (4) processing of food

items prior to cooking and/or drying; and (5) preparation--cooking and/or drying--of food stuffs for consumption or storage.

Our assumptions concerning the relationship between artifacts and features on the one hand and activities on the other are greatly conditioned by the overall distribution of cultural materials in the study area. It is apparent that very similar suites of items occur across the landscape. We expect that a range of activities if not most of proposed activities, co-occurred in relatively small areas regardless of landform. As we hope to demonstrate, the differences we measure are mainly in terms of overall intensity of aboriginal use and secondarily in terms of proportionally differential activities that may have occurred in any given area or on a given landform. Table 10 summarizes our inferences about the relationship between kinds of cultural materials and basic activities.

The most difficult artifacts to assign function or to equate with activities are the flaked cobbles. Our initial impression was that cobbles with sharp edges should be assigned to the lithic tool manufacturing activity and those with battered and pecked surfaces should be considered more closely related to processing activities. If this impression is reasonable, then it is expected that BTC, PKC, BCB, and UCB artifacts would be significantly correlated among themselves and with items representing other kinds of activities more often than with artifacts associated with lithic tool manufacture (e.g., cores and flakes).

We performed a crude test of this idea by generating correlation coefficients for all artifact and feature variables. Correlations were between two variables within 50 m units in each landform. The exhaustive data set from the islands was used. Information from the islands was employed because they represent the least disturbed surfaces and the kinds of materials there are similar to those from other landforms. Only correlation coefficients greater than or equal to 0.5 with significance values greater than or equal to 0.0001 were considered. Furthermore, only correlations that contained five or more items were utilized in our calculations. The results were that 56.8% of the high and significant correlations were among the PKC, BTC, UCB, BCB, bone, shell, and fire-cracked rock scatters and features as well as flaked tools. The lithic items we thought were related to processing correlated with those we thought were related to lithic tool manufacture 43.2% of the time. The figures were 54.7% and 45.3% when all correlations significant at the 0.0001 level were considered. These results lend some credence to our initial impressions. However, the BTC, PKC, BCB, and UCB artifact types were strongly correlated with artifacts considered to represent tool manufacture more often than with artifacts and features thought to represent any other single basic activity. Thus, we must recognize that the assumed connection between BTC, PKC, BCB, and UCB artifacts and processing of food items is weak.

The other inferred activities are less subtle. Our procurement artifacts and features--NGS, SCBO, SCF, and SCSH--are certainly related to procuring food items. Albeit the specific activities of hunting,

Table 10. Summary of the relationship between inferred activities and cultural materials.

Inferred Basic Activity	Representative Artifact and Feature Types	
Residence/Storage	PSF:	Pit structure features
Procurement		
Fish	NGS:	Notched and grooved stone
Mammals	SCBO:	Scattered bone
Shell Fish	SCF:	Shell concentration features
	SCSH:	Scattered shell
Preparation	RHF:	FCR and hearth features
	BFCR:	Beach zone scattered FCR
	DFCR:	Dune zone scattered FCR
	HFCR:	Higher zone, scattered FCR
Processing	PKC:	Pecked cobbles
	BTC:	Battered cobbles
	GRND:	Ground stone
	CMT:	Chert modified flakes and tools
	NMT:	Non-chert modified flakes and tools
	BCB:	Bifacial cobbles, battered edge(s)
	UCB:	Unifacial cobble, battered edge(s)
Tool Manufacturing	BCS:	Bifacial cobble, sharp edge(s)
	UCS:	Unifacial cobble, sharp edge(s)
	CCORE:	Chert core
	CFLAKE:	Chert flake
	NCC:	Non-chert core
	NFLK	Non-chert flake

shell fishing, and fishing may not have occurred where the materials were discovered, it is reasonable to assume that their presence is indicative of food procurement activities. In other words, the food procurement items represent only a subset of the actual procurement activities and they also represent a subset of food preparation activities. Nonetheless, these artifacts and features represent our most direct link with actual procurement activities, given our assumption that those activities are represented in the survey area. Pit structure features (i.e., housepits) as we have defined them are clearly related to residence and/or storage. Undoubtedly fire-cracked rock (FCR) was produced as a by-product of a variety of activities, but our firm impression is that the bulk of FCR in the study area--RHF, BFCR, DFCR, and HFCR--is directly related to cooking and/or drying and smoking of foodstuffs. Some FCR in the area is likely related to sweat bathing, or it may have been produced in fires maintained only for heating purposes; however, we expect that these were comparatively minor factors.

The pecked cobbles (PKC) from the study area resemble artifacts termed hopper-mortar bases and anvil stones elsewhere in the Plateau and they are considered to have been used in the process of pulverizing foods and in the process of extracting bone marrow, respectively. We recognize that some pecked cobbles exhibiting only a few large, scattered incipient cones on their faces were also used as anvil stones in the manufacture of chipped stone tools. Nonflaked, battered cobbles and flaked cobbles with battered edges--BTC, BCB, and UCB--are likely to be the result of pounding actions that damage flaked and nonflaked edges. Formal pestles are entirely absent from our sample and hopper-mortar base-like pecked cobbles are very common. Considering this we think it is likely that the majority of the BTC, BCB, and UCB artifacts were used as crude pestles to pulverize foodstuffs. However, it is obvious that some must have been used as hammerstones for the manufacture of stone tools. We also recognize that some of the wear/use edge damage may be the result of natural process such as wind and water actions that tend to round and chip sharp edges. Ground stone artifacts in our sample are rare but those observed are like items commonly referred to as grinding slabs and stones and considered to have been used to process seeds. Chert (CMT) and nonchert (NMT) tool types include edge-modified flakes, unifaces, bifaces, and projectile points. This group of tools primarily includes small artifacts that are traditionally associated with processing of game animals. Even projectile points are considered to be multiple purpose tools used for a variety of scraping and cutting tasks.

As has been mentioned, flaked cobbles with sharp edges (BCS and UCS) were grouped with flakes and cores as probable indicators of tool manufacture primarily because they are routinely and positively correlated among themselves as well as with other kinds of artifacts in the study area. Furthermore, flaked cobbles with sharp edges were so termed because they lacked readily detectable edge damage. The cobbles tend to be large and one would expect them to have been used for comparatively heavy-duty tasks (e.g., chopping or battering). In other words, if the sharp edge cobbles had been used regularly as processing

tools they should have damaged edges; when they do not, it is likely their function was to produce flakes that were used as tools with or without modification. Inclusion of chert (CCORE) and nonchert (NCC) cores as indicators of tool manufacturing activities hardly requires explanation, but the inclusion of flakes requires some discussion. Flakes without edge modification are routinely considered debitage and we too have taken this approach with some reservations. Obvious tools produced on flakes are far less common in the area than would normally be expected considering the comparatively high frequencies of other tools. Our best guess is that many unmodified, no-chert flakes (NFLK) may well have functioned as tools, but were not used enough to develop readily detectable edge damage. Since we did not attempt to study minor differences in edge damage, we are compelled to include NFLKs with other artifacts that infer tool manufacturing. Chert flakes (CFLK), on the other hand, tend to be very small and probably are by-products of tool manufacture, thus there is much less doubt about the reliability of including them in the basic tool manufacturing category.

Lithic raw materials in the form of relatively coarse grain river cobbles are widely available in the study area and they are of rather poor quality compared to the finer grain and much rarer chert-like materials. It is probable that tool manufacture utilizing coarse grain cobbles was not a routine activity directed toward production of curated artifacts. Rather, most tool manufacturing in the area was likely for the production of expediency tools that were used on-the-spot with other kinds of artifacts and features that represent primarily processing activities.

The entire argument for inferring activities from material items, as presented in the preceding paragraphs, is a clear case of stretching the data. The approach is simplistic and represents a generalized way to measure activities. It is, nonetheless, defensible for at least two reasons. First, the inferences apply only to very generalized kinds of basic activities. Our intent is to suggest the broad kinds of subsistence activities that probably occurred in the area and employ a means to grossly measure or monitor them. Second, and most importantly, we have developed a framework for analyzing the data and constructing a series of testable ideas. The ideas presented can be tested, refuted, supplemented, or modified during the course of future investigations.

Type-Area and Cultural Materials

The traditional method of describing the spatial distribution of cultural materials in terms of sites has not been effective in the study area. Cultural materials are present throughout the area and this precludes defining sites on the basis of the presence of cultural materials. Defining sites on the basis of relatively high material densities within areas of a specified size is more effective. However, that approach presumes there are readily detectable and quantifiable differences between the widespread low density scatter and sporadic areas of relatively high density and that these differences are

understood at the outset. Several reconnaissance level surveys have been conducted in the study area. It appears that each succeeding survey has progressively filled in gaps between previously recorded sites, modified the boundaries of others, and recorded different kinds of aboriginal sites. In several places two or three sites occupy the same area.

It was the virtually continuous distribution of cultural materials that led us to implement a nonsite intensive survey. Once the field information was transformed into an inventory list of the contents of each 50 m survey unit it became possible to empirically define and describe the spatial distribution of cultural materials. The analytical methods (see Chapter 3) and certain aspects of the distribution of cultural materials within landforms have already been discussed. We now turn our attention to the results of the cluster analysis.

The cluster analysis provided a means to classify the 408, 100 m survey units into discrete entities on the basis of their aboriginal material content. We are both satisfied and confident with the overall results. Not only are the clusters readily definable in empirical terms, but they represent differences that were obvious during the course of fieldwork and preliminary analysis. This second point is extremely significant. Many of the ideas and concepts that are generated concerning relationships of cultural materials are frequently intuitive and very hard to quantify. Nonetheless, they are based on first-hand observations and may well be accurate even though they are difficult to document.

A total of nine clusters was defined for the sample, each containing from 1 to 317, 100 m survey units or cases. The largest group--cluster nine--was reanalyzed and divided into three subgroups with 32, 59, and 226 cases. We employ the term "type-areas" as a designation for the clusters. In our system there are three broad kinds of type-areas: (1) pit structure areas, represented by cluster 1, 2, 7, and 8; (2) high density areas represented by clusters 3, 4, 5, and 6; and (3) low density areas represented by cluster 9. Table 11 presents the frequencies and distributions of the various type-areas by landform.

Comprehension of the relationships among type-areas is facilitated by an understanding of the relative importance of each variable (i.e., artifact and feature type) in the derivation of the clusters. The F-ratio score in the cluster analysis package measures the importance of each variable toward differentiating the clusters. The four important ones, in order of importance, are PSF, CFLK, RHF, and CCORE. The least significant variables are GRND and DFCR. Table 12 lists the F-ratio scores for all variables in descending order of importance; it also indicates the inferred activity for each variable.

Several factors related to the F-ratio scores merit some comment. The three variables--PSF, CFLK, and RHF--with the highest scores are disproportionately important in comparison to all other variables for deriving the cluster solution. Three of the five basic activities (residence/storage, tool manufacture, and food preparation)

Table 11. Frequencies and distributions of clusters or type-areas by landforms

Cluster/Type Area (listed by order of computer derivation)	Location/Landform *														Totals
	Islands				West Shore				East Shore						
	BAF		BLF		BHF		BSD		BHF		BHG		WTB		
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
Pit Structure Area 1	1	2.4	--	--	--	--	--	--	--	--	--	--	--	--	1
Pit Structure Area 2	6	14.6	--	--	4	5.8	--	--	1	2.8	--	--	--	--	11
High Density Area 1	3	7.3	--	--	--	--	--	--	--	--	--	--	--	--	3
High Density Area 2	6	14.6	3	2.6	1	1.4	4	5.9	--	--	--	--	--	--	14
High Density Area 3	--	--	1	0.9	--	--	--	--	--	--	--	--	--	--	1
High Density Area 4	5	12.2	18	15.4	14	20.3	12	17.6	3	8.3	--	--	--	--	52
Pit Structure Area 3	1	2.4	--	--	1	1.4	--	--	--	--	--	--	--	--	2
Pit Structure Area 4	3	7.3	--	--	4	5.8	--	--	--	--	--	--	--	--	7
Low Density Area	16	39.2	95	81.1	45	65.3	52	76.5	32	88.9	52	100	25	100	317
Totals	41	100	117	100	69	100	68	100	36	100	52	100	25	100	408
Low Density Sub-Area 1	--	--	2	2.1	5	11.1	14	27.0	10	31.25	--	--	1	4	32
Low Density Sub-Area 2	4	25	12	12.6	14	31.1	19	35.5	4	12.5	4	7.7	2	8	59
Low Density Sub-Area 3	12	75	81	85.3	26	57.8	19	36.5	18	56.25	48	92.3	22	88	226
Totals	16	100	95	100	45	100	52	100	32	100	52	100	25	100	317

Table 11. Continued

*Key to landform abbreviations:

BAF: Beaches and alluvial flat, islands
BLF: Beaches and low flat, islands
BHF: Beach through high flood, shores
BSD: Beach through sand dune, west shore
BHG: Beach through high gravel terrace, east shore
WTB: Beach to White Bluffs, east shore

Table 12. F-ratio scores for variables in the cluster analysis.

Variable/Artifact or Feature Type (inferred activity)		F-Ratio Score
PSF:	Pit structure feature (residence/storage)	3695.049
CFLK:	Chert flake (tool manufacture)	875.674
RHF:	FCR and hearth feature (preparation)	269.532
CCORE:	Chert core (tool manufacture)	41.156
BCS:	Bifacial cobble, sharp (tool manufacture)	25.642
BTC:	Battered cobble (processing)	20.240
NFLK:	Non-chert flake (tool manufacture)	20.076
UCS:	Unifacial cobble, sharp (tool manufacture)	18.777
BFCR:	FCR density, beach zone (preparation)	18.669
PKC:	Pecked cobble (processing)	17.265
NCC:	Non-chert core (tool manufacture)	14.045
BCB:	Bifacial cobble, battered (processing)	13.267
SCF:	Shell concentration feature (procurement)	12.877
UCB:	Unifacial cobble, battered (processing)	10.993
NMT:	Non-chert mod. flake and tool (processing)	6.555
NGS:	Notched and grooved stone (procurement)	6.122
SCSH:	Scattered shell (procurement)	4.237
SCBO:	Scattered bone (procurement)	4.201
HFCR:	FCR density, higher zone (preparation)	4.030
CMT:	Chert mod. flake and tool (processing)	3.117
GRND:	Ground stone (processing)	0.654
DRCR:	FCR density dune zone (preparation)	0.134

are represented by the three variables. The particular variables are among the more obvious indicators of their respective activities. By implication it can be assumed that the other two activities (procurement and processing) are indirectly represented since foodstuffs must be procured and processed before they can be prepared for consumption and storage.

It is encouraging to note that high and low visibility (in terms of discoverability in the field) items as well as those that are comparatively rare and abundant are included in the more important variables. In other words, a wide variety of kinds of cultural materials were instrumental in forming the cluster solutions, as opposed to a situation where only the most common and easily found items contributed significantly to the cluster solution. Another encouraging aspect is that our overall impressions during field work and preliminary analysis led to the belief that the PSF and RHF variables as well as chert debitage, including the CCORE variable, were crucial in distinguishing type areas. The computer, in effect, verified our belief.

Classification of the study area according to type-areas provides the means to address most of the stated research questions. We are able to discuss each type-area in terms of its material culture content and distribution across landforms. This includes the capability to characterize type-areas with regard to suites of artifacts (i.e., "assemblages") and inferred activities. We implemented a separate correlation coefficient analysis for each cluster as a means to better understand the spatial relationships between artifacts or features as well as between basic activities. For those clusters with more than five members or cases (i.e., 100 m survey units), the meaningful results of the correlation analysis are also discussed. We recognize that ideally 30 or more cases are necessary for meaningful correlations. However, since each type-area contains only similar cases, albeit fewer than 30, it seems appropriate to use significant correlation coefficients as indicators of spatial relationships. The distribution of types-areas within the survey area is illustrated in Figure 34, sheets 1 through 13. These maps illustrate the location of features, projectile points, notched pebbles, and grooved cobbles, as well as designating landforms and type-area membership of each survey unit. The entire regrouped data set for 100 m survey units within each type-area is presented in Appendix C. These data are supplementary to those presented in Figure 34. Even more specific data can be obtained by referring to Appendix B; it is the inventory list and provides the exhaustive data set for the 50 m survey units.

Each type-area is discussed in the following subsections. Tables summarize average material culture content for 100 m units or cases in each type-area. Statistics for weighted and unweighted variables are included in the tables because it allows the reader to understand the effects of weighting on each cluster. Furthermore, the weighted statistics are most useful when comparing features and the unweighted statistics are more useful when making comparisons among the other types. As noted, the statistics describe the contents of the

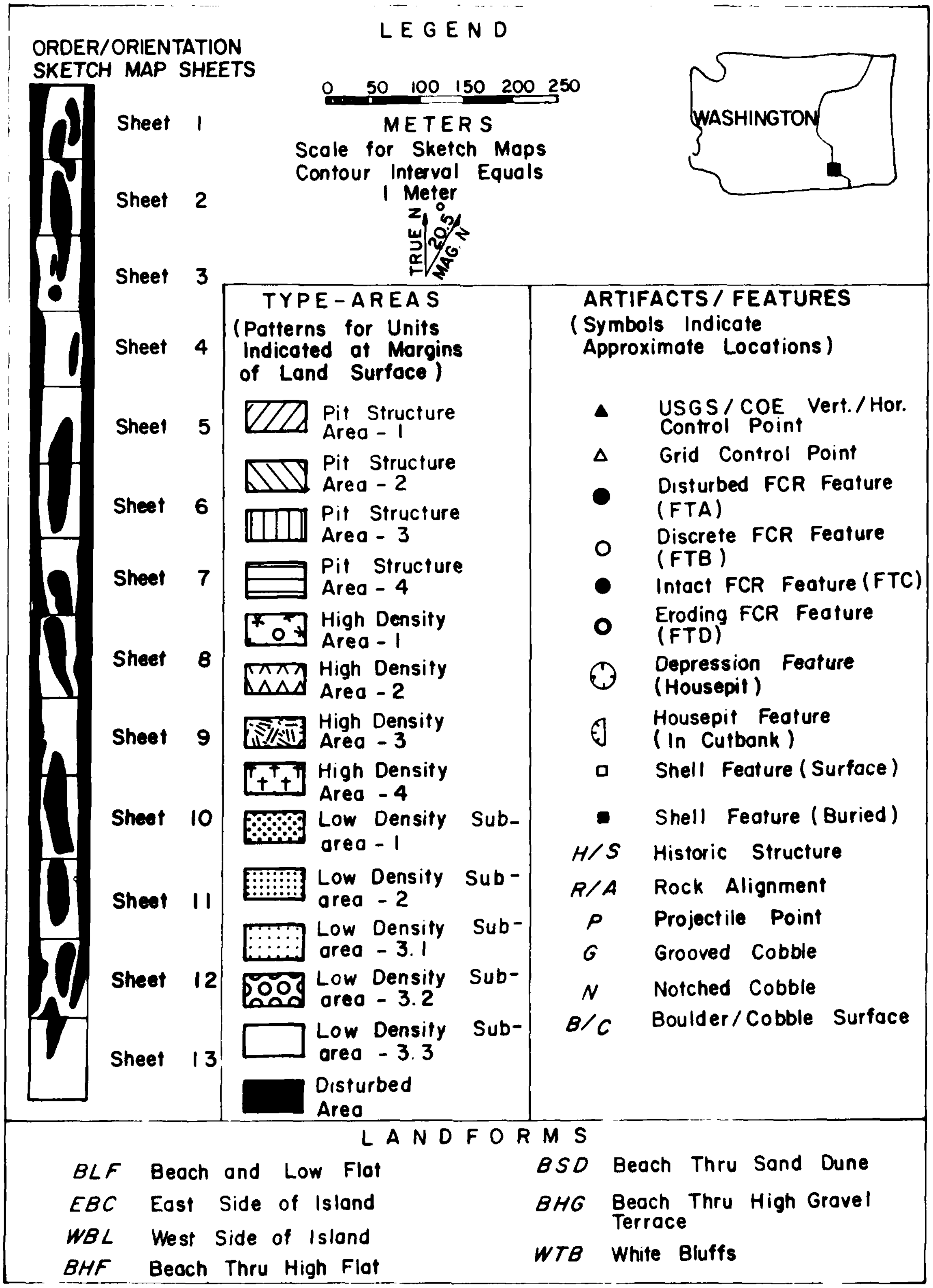
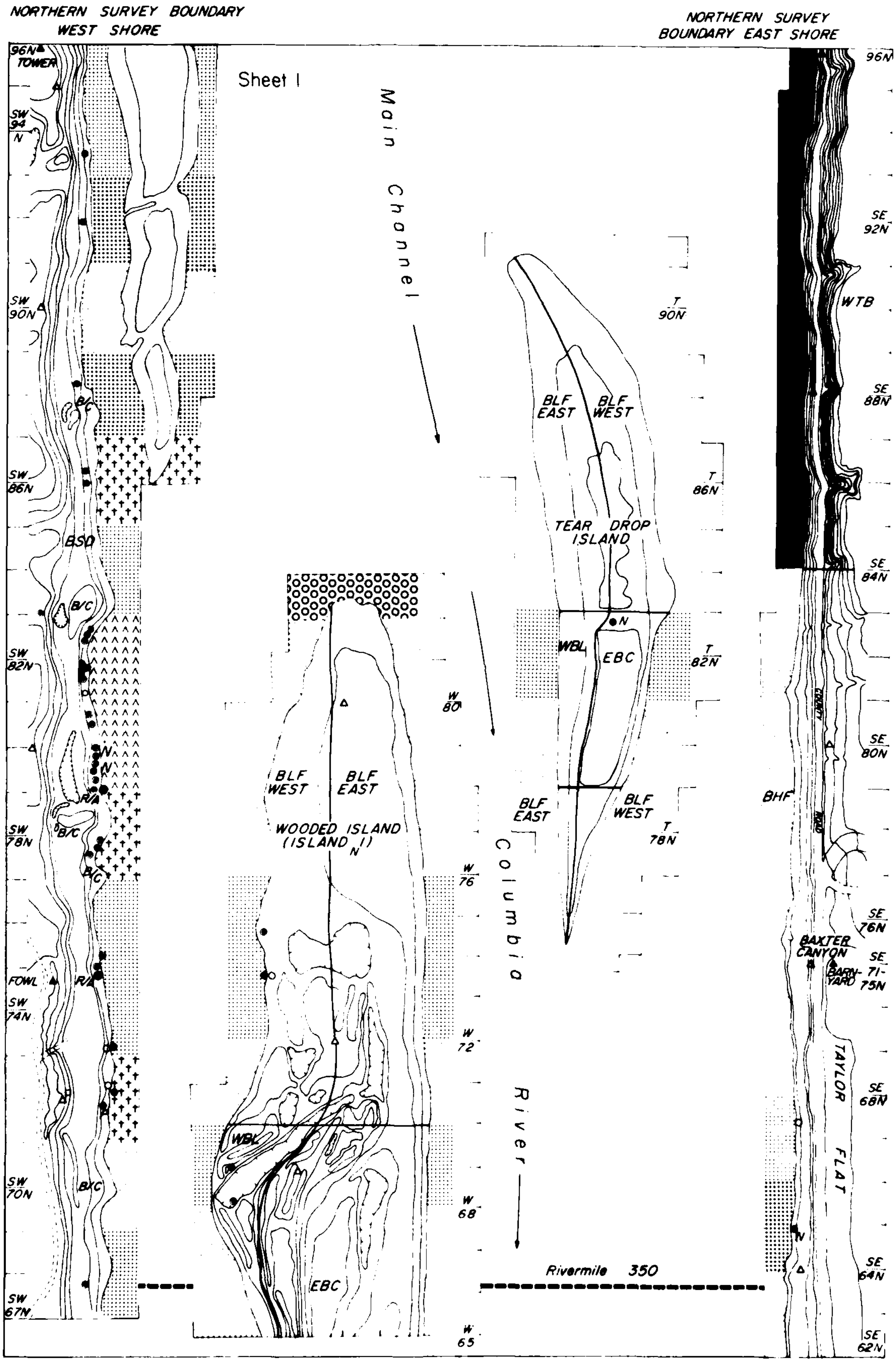


Figure 34. Legend and sketch maps (sheets 1-13) of project area indicating locations of type-areas and selected artifacts and features.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WEST SHORE
NORTHERN SURVEY
BOUNDARY EAST SHORE
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Main Channel
Columbia River
BLF EAST
BLF WEST
TEAR DROP ISLAND
WBL
EBC
BLF WEST
BLF EAST
WOODED ISLAND
(ISLAND I)
Rivermile 350
TOWER
FOWL
BSQ
WTB
BHF
BAXTER CANYON
BARN-YARD
TAYLOR FLAT
96N
SW 94N
SW 90N
SW 86N
SW 82N
SW 78N
SW 74N
SW 70N
SW 67N
SE 92N
SE 88N
SE 84N
SE 80N
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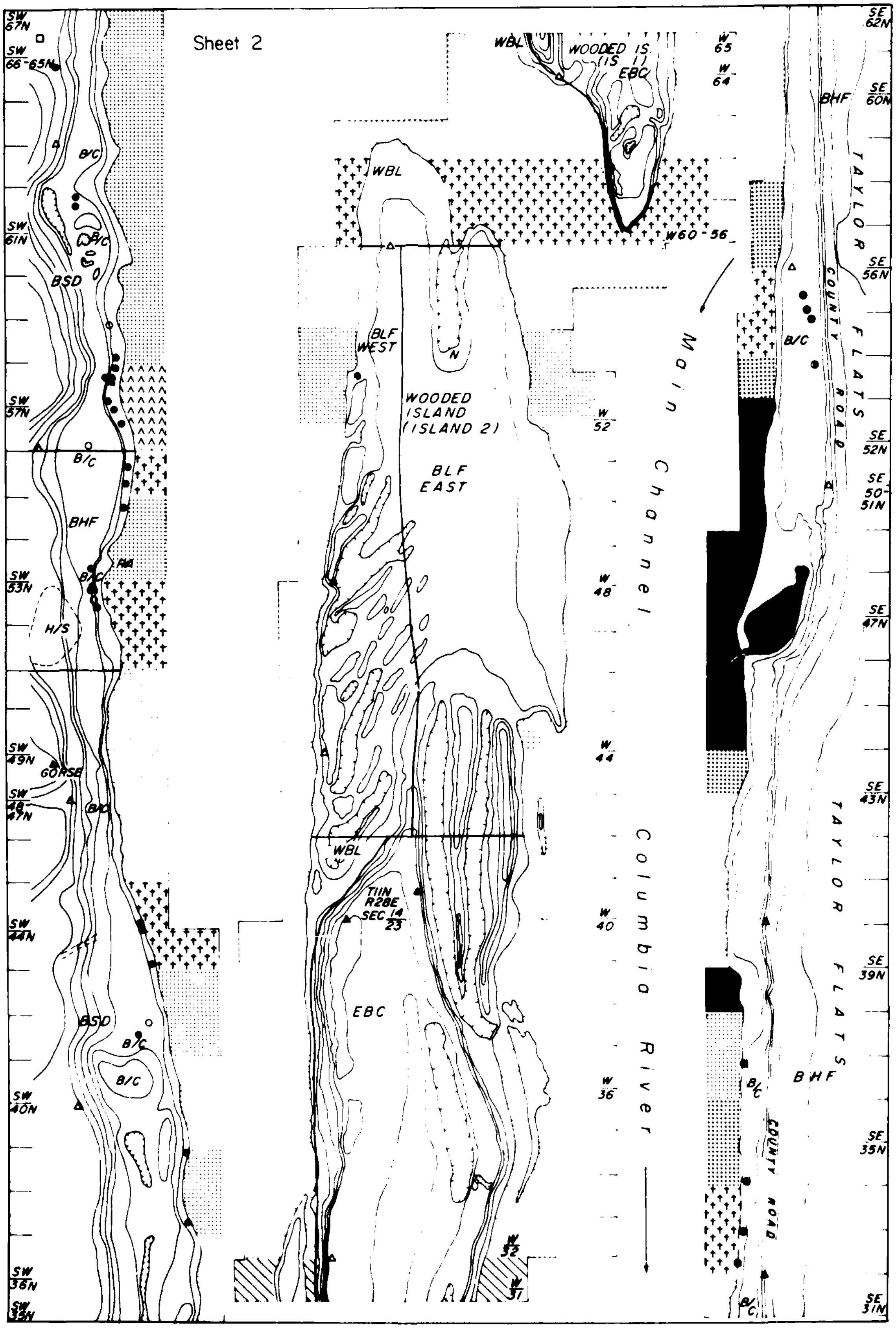
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SW 66-65N
B/C
SW 61N
BSD
SW 57N
BHF
SW 53N
H/S
SW 49N
GORSE
SW 48-47N
SW 44N
SW 40N
SW 36N
SW 35N
WBL
WOODED IS. (IS 1)
EBC
W 65
W 64
W60-56
BLF WEST
WOODED ISLAND (ISLAND 2)
BLF EAST
N
W 52
W 48
W 44
W 40
W 36
W 32
W 31
T11N R28E SEC 14/23
Main Channel
Columbia River
TAYLOR FLATS
COUNTY ROAD
BHF
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SE 52N
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SE 39N
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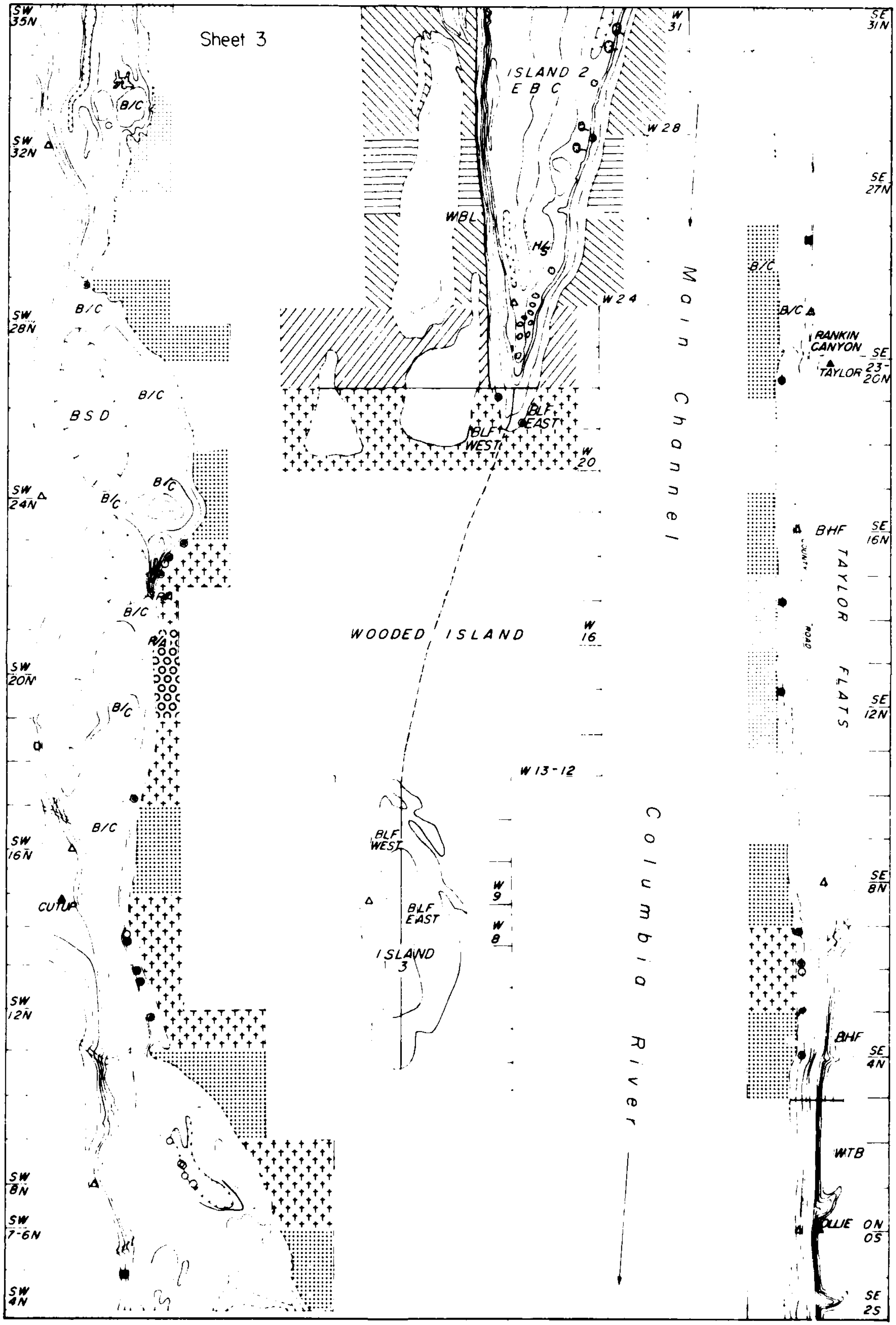
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SW 8N
SW 7-6N
SW 4N
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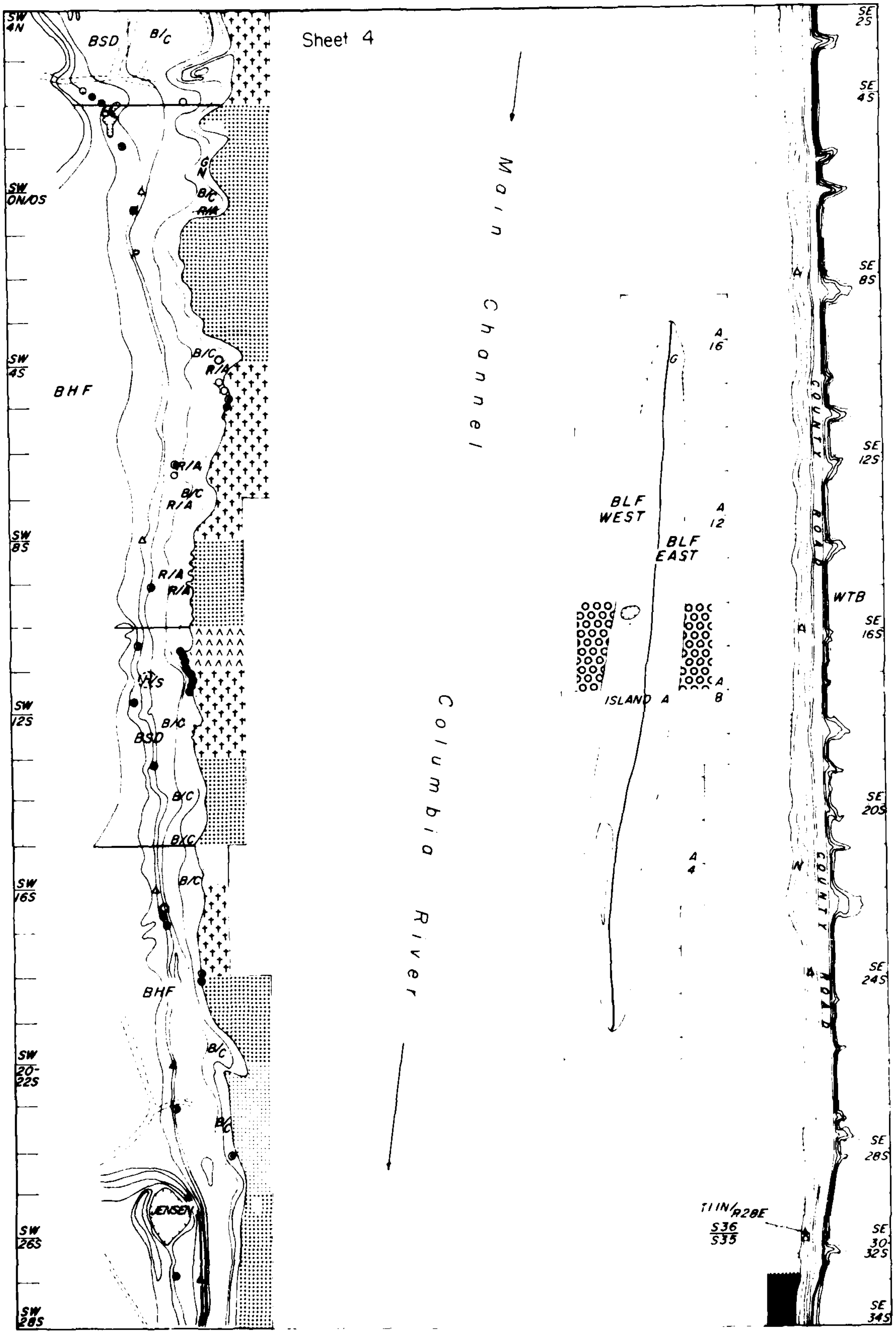
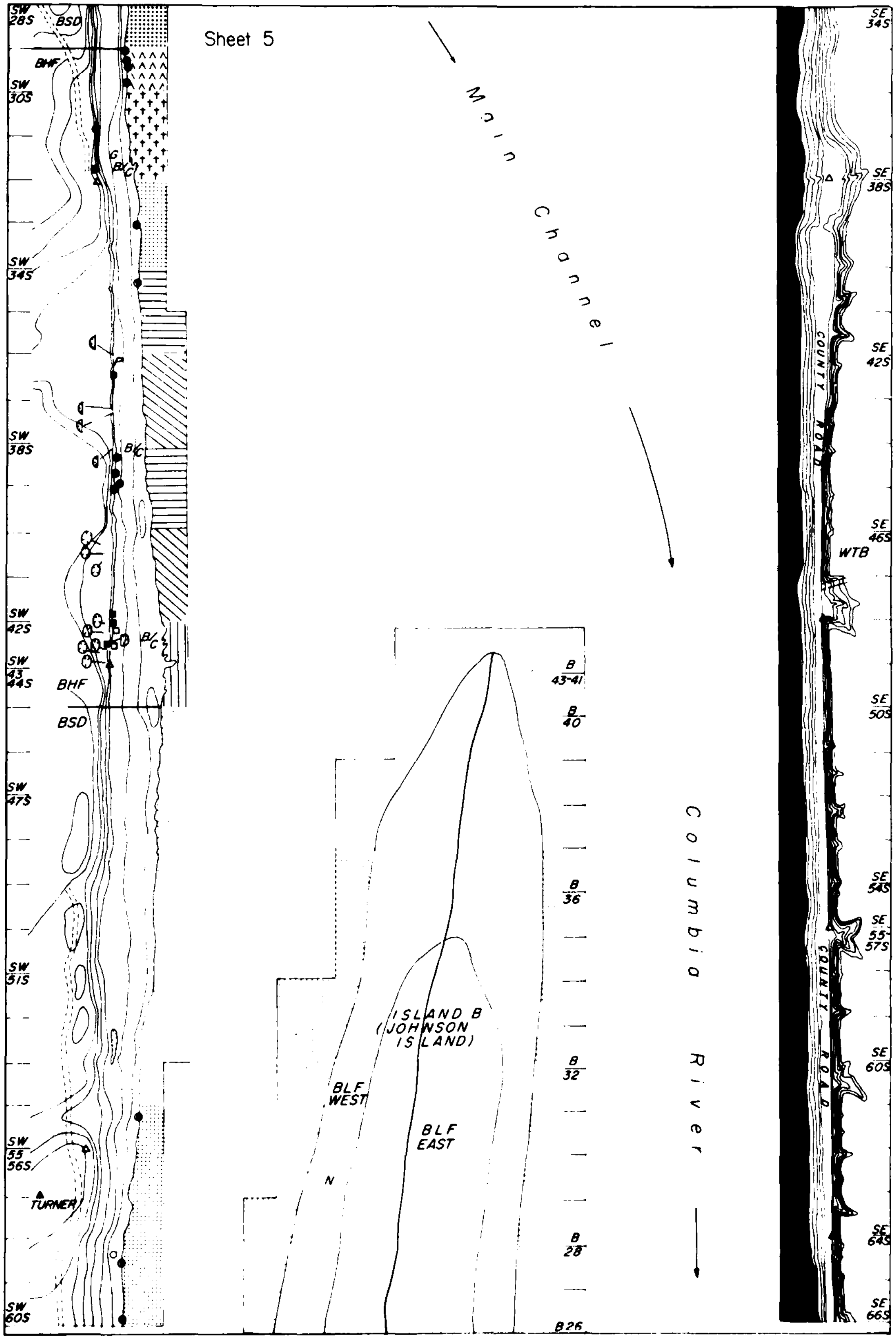
ISLAND 2
E B C
WBL
HS
W 31
W 28
W 24
W 20
W 16
W 13-12
W 9
W 8
BLF EAST
BLF WEST
WOODED ISLAND
ISLAND 3
Main Channel
Columbia River
SE 31N
SE 27N
SE 23-20N
SE 16N
SE 12N
SE 8N
SE 4N
ON 05
SE 2S
RANKIN CANYON
TAYLOR
BHF
TAYLOR FLATS
WTB
OLLIE


Sheet 4
Main Channel
Columbia River
SW 4N
SW ON/OS
SW 4S
SW 8S
SW 12S
SW 16S
SW 20-22S
SW 26S
SW 28S
BSD
B/C
BHF
R/A
JENSEN
BLF WEST
BLF EAST
ISLAND A
WTB
COUNTY ROAD
T11N/R28E
S36
S35
SE 2S
SE 4S
SE 8S
SE 12S
SE 16S
SE 20S
SE 24S
SE 28S
SE 30-32S
SE 34S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Main Channel
Columbia River
ISLAND B (JOHNSON ISLAND)
BLF WEST
BLF EAST
COUNTY ROAD
WTB
TURNER
BHF
BSD
SW 28S
SW 30S
SW 34S
SW 38S
SW 42S
SW 43 44S
SW 47S
SW 51S
SW 55 56S
SW 60S
SE 34S
SE 38S
SE 42S
SE 46S
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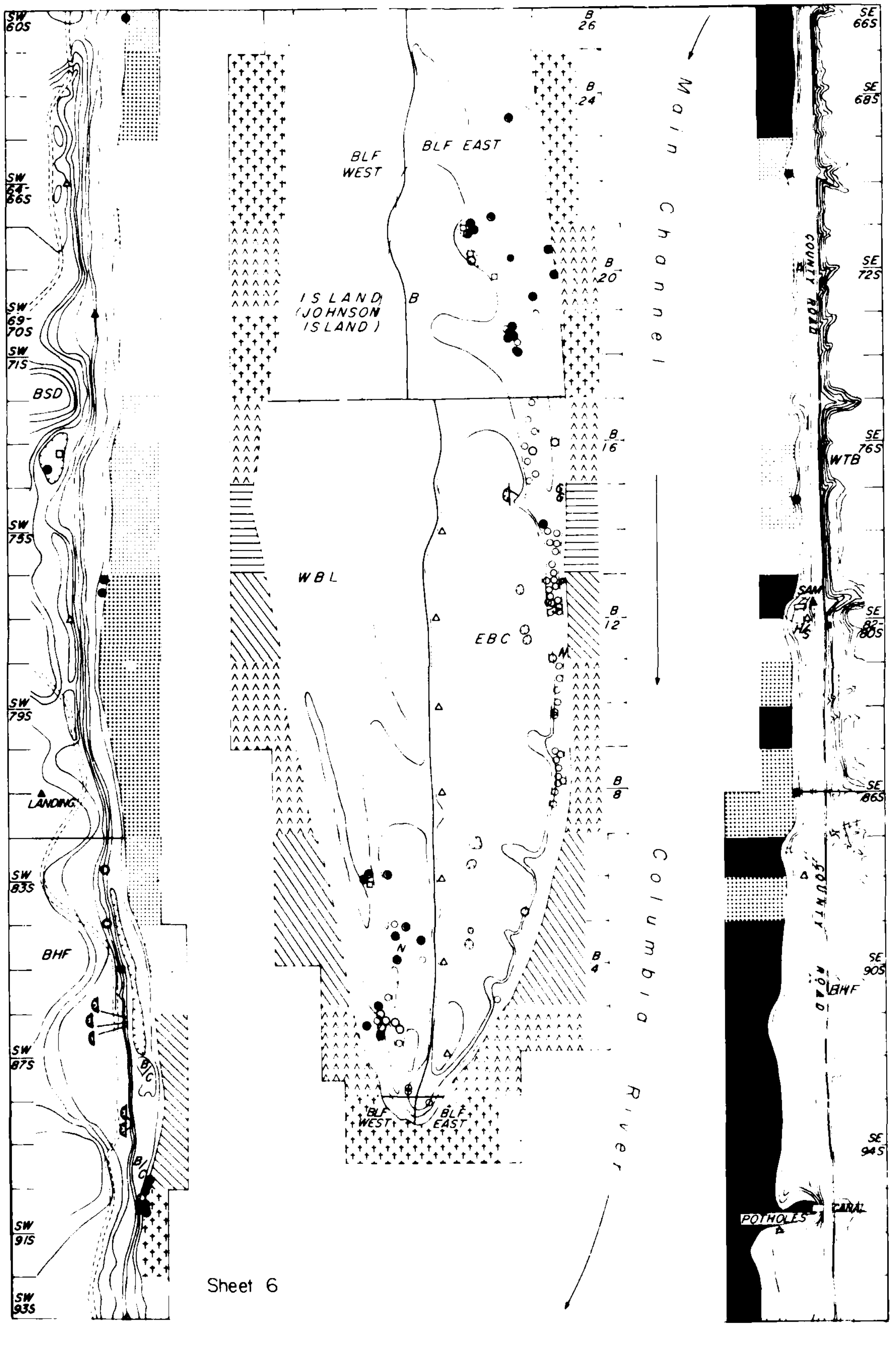
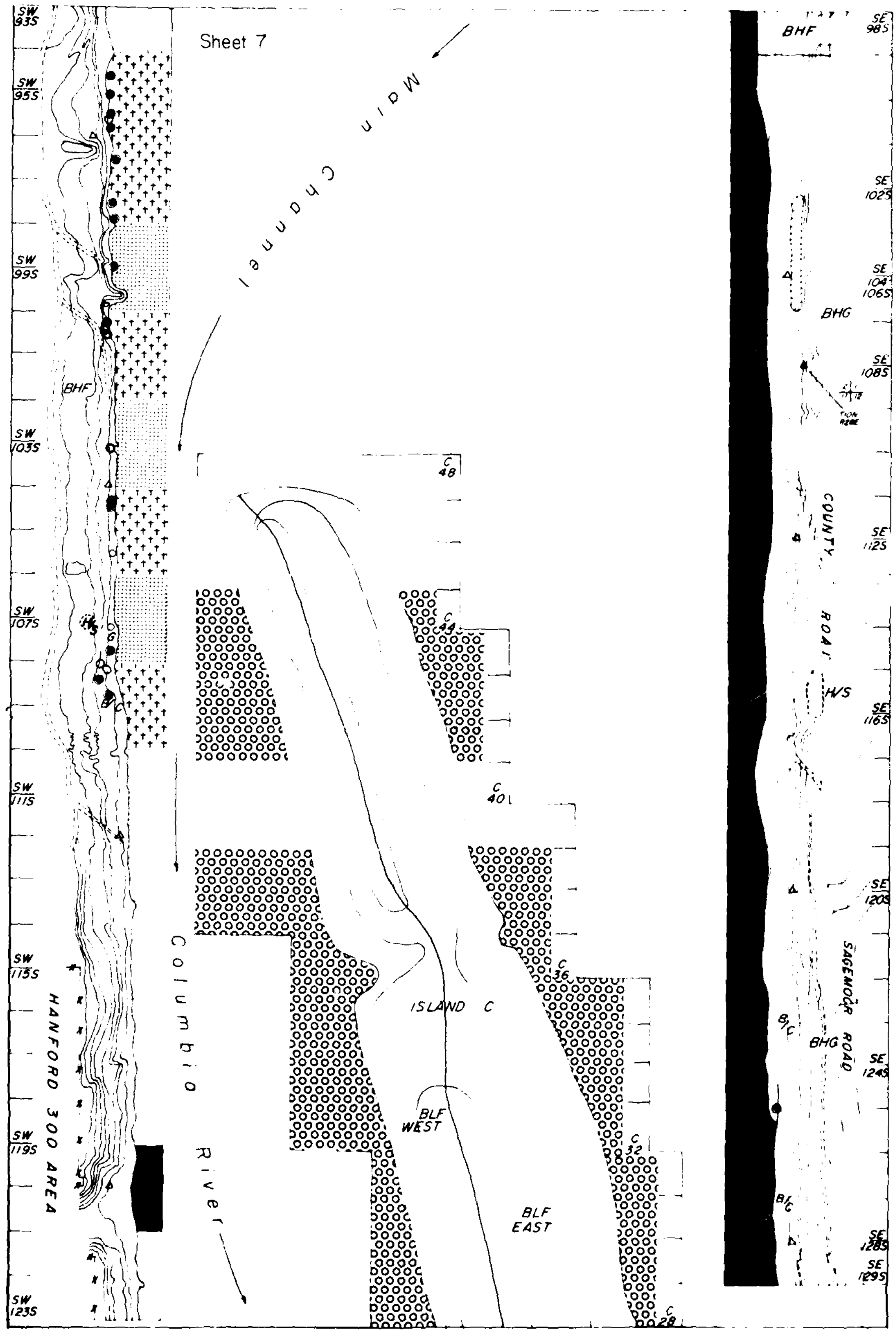
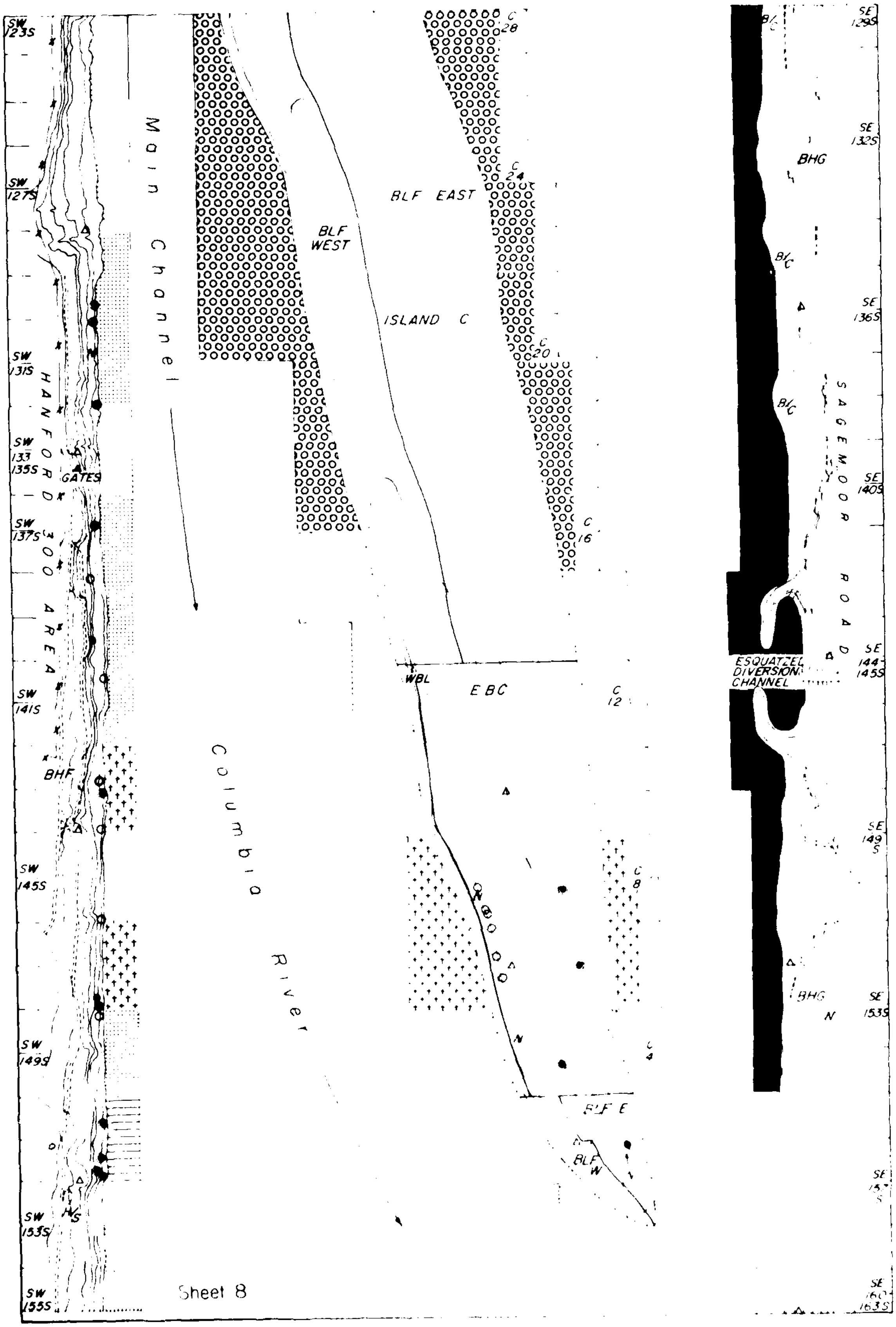
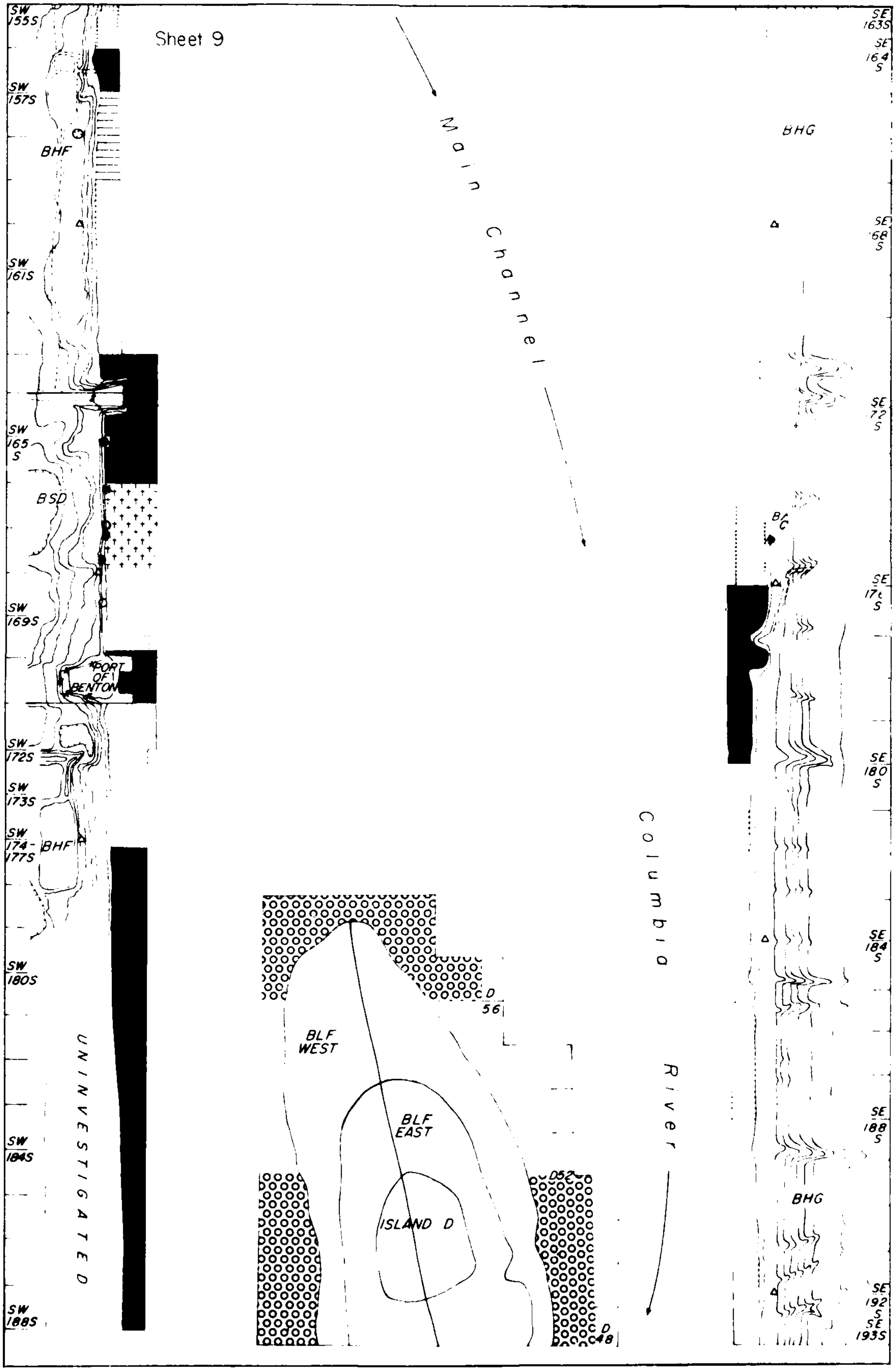
B 36
B 32
B 28
B26


SW 60S
SW 64-66S
SW 69-70S
SW 71S
BSD
SW 75S
SW 79S
LANDING
SW 83S
BHF
SW 87S
B/C
SW 91S
SW 93S
B 26
B 24
BLF WEST
BLF EAST
ISLAND (JOHNSON ISLAND)
B
B 20
B 16
WBL
EBC
B 12
B 8
B 4
BLF WEST
BLF EAST
Main Channel
Columbia River
SE 66S
SE 68S
COUNTY ROAD
SE 72S
SE 76S
WTB
SE 82-180S
SE 186S
SE 90S
BHF
SE 94S
POTHOLES
CANAL

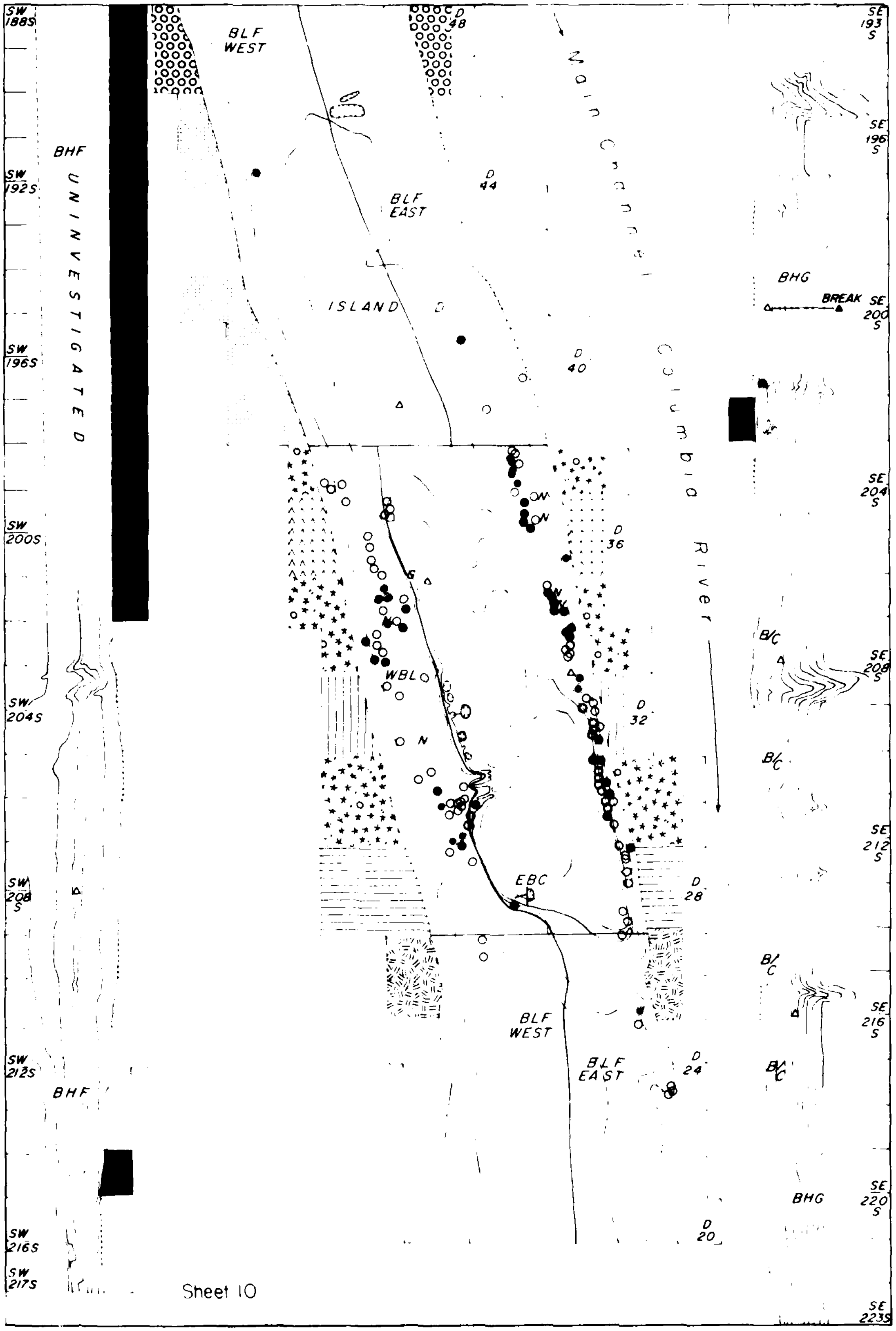
Sheet 6


Sheet 7
Main Channel
Columbia River
HANFORD 300 AREA
ISLAND C
BLF WEST
BLF EAST
COUNTY ROAD
SAGEMOOR ROAD
BHF
BHG
H/S
B/C
SW 93S
SW 95S
SW 99S
SW 103S
SW 107S
SW 111S
SW 115S
SW 119S
SW 123S
SE 98S
SE 102S
SE 104S 106S
SE 108S
SE 112S
SE 116S
SE 120S
SE 124S
SE 128S
SE 129S
C 48
C 44
C 40
C 36
C 32
C 28


SW 123S
SW 127S
SW 131S
SW 133 135S
SW 137S
SW 141S
SW 145S
SW 149S
SW 153S
SW 155S
HANFORD 300 AREA
GATES
BHF
H/S
Main Channel
Columbia River
BLF WEST
BLF EAST
ISLAND C
C 28
C 24
C 20
C 16
C 12
C 8
C 4
WBL
EBC
BLF E
BLF W
SE 129S
SE 132S
SE 136S
SE 140S
SE 144-145S
SE 149 S
SE 153S
SE 160-163S
BHG
B/C
SAGEMOOR ROAD
ESQUATZEL DIVERSION CHANNEL
N
Sheet 8



Sheet 9
SW 155S
SW 157S
BHF
SW 161S
SW 165 S
BSD
SW 169S
PORT OF BENTON
SW 172S
SW 173S
SW 174-177S
BHF
SW 180S
SW 184S
SW 188S
UNINVESTIGATED
Main Channel
Columbia River
BLF WEST
BLF EAST
ISLAND D
D 56
D52
D 48
SE 163S
SE 164 S
BHG
SE 168 S
SE 172 S
SE 180 S
SE 184 S
SE 188 S
BHG
SE 192 S
SE 193S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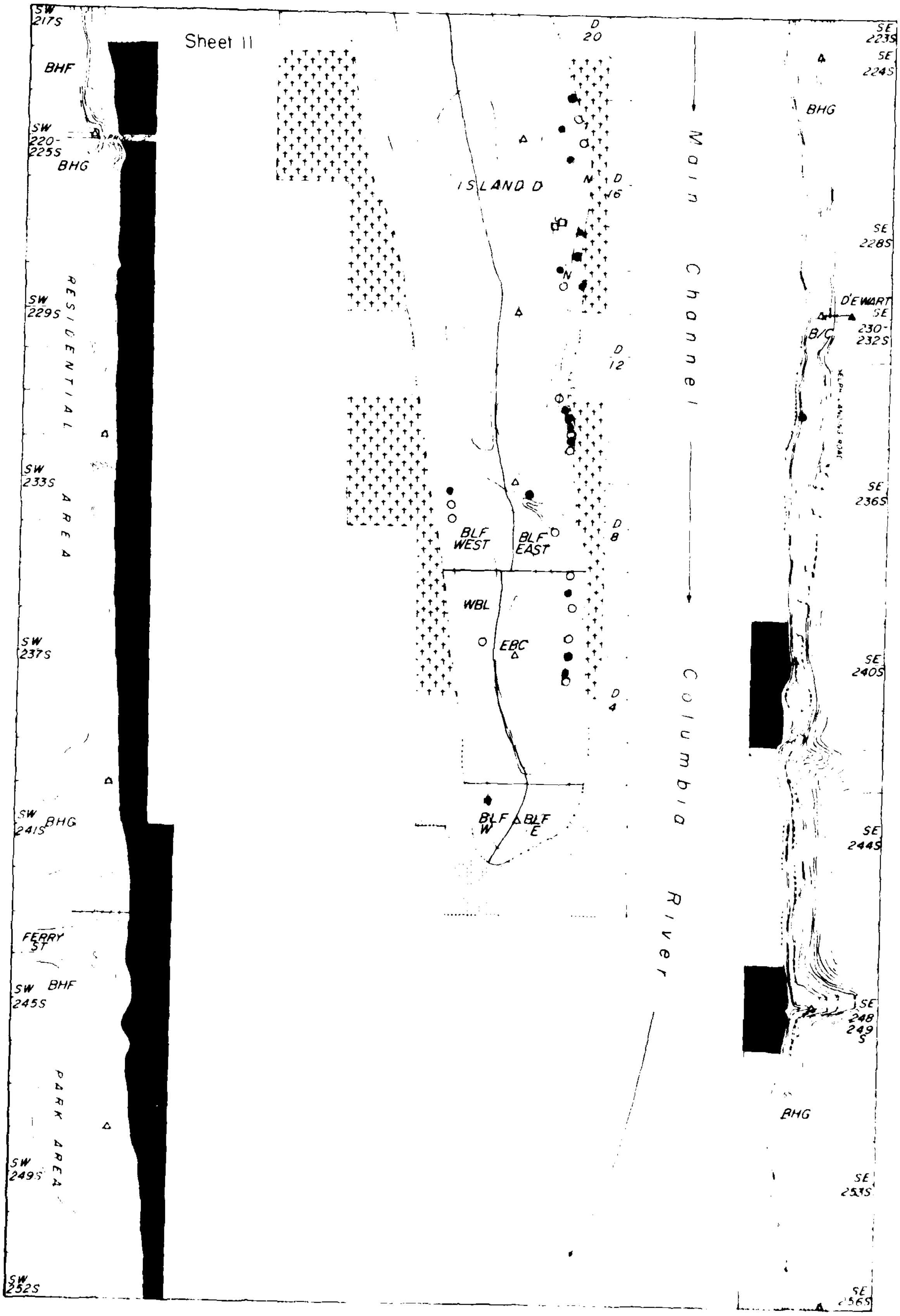
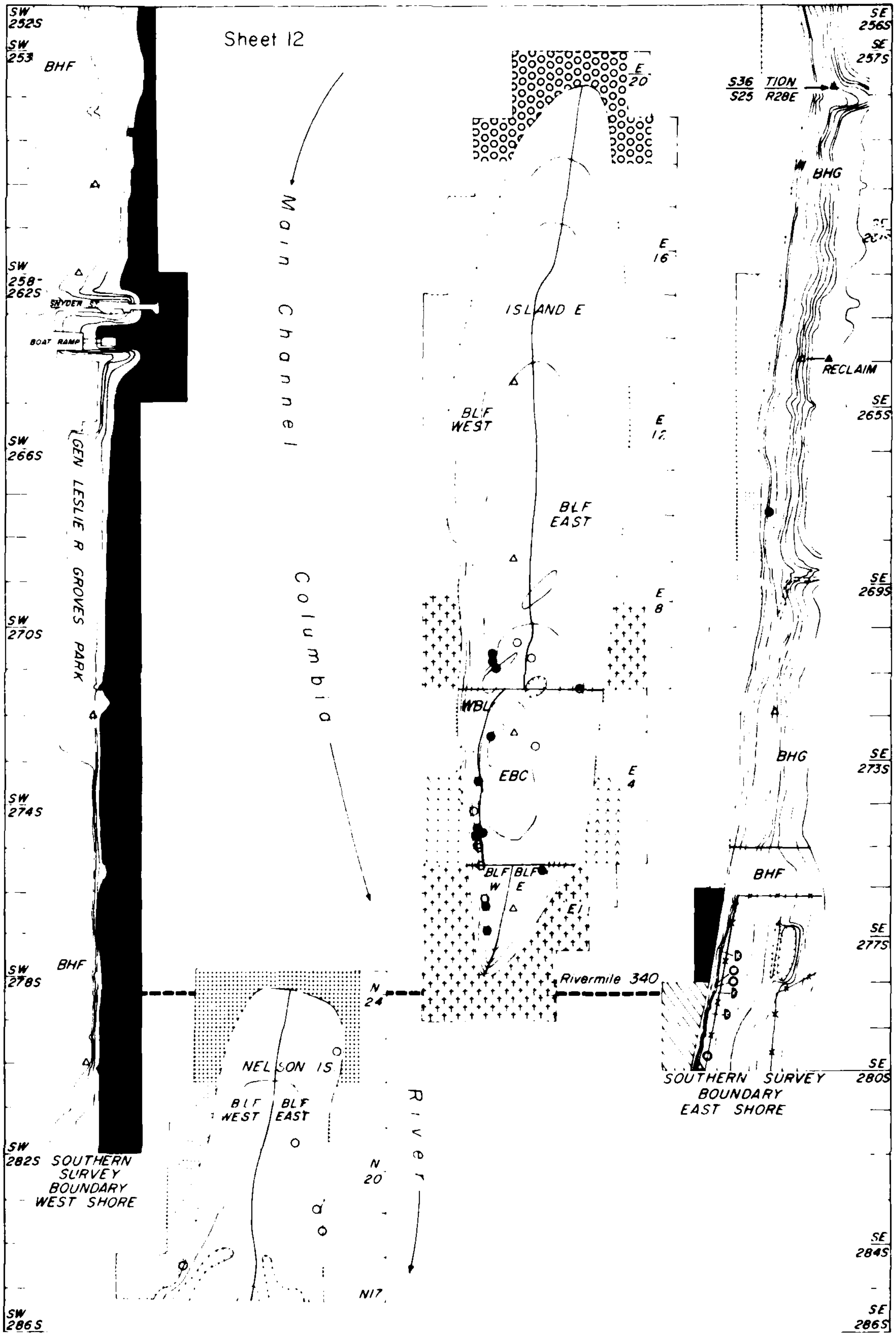
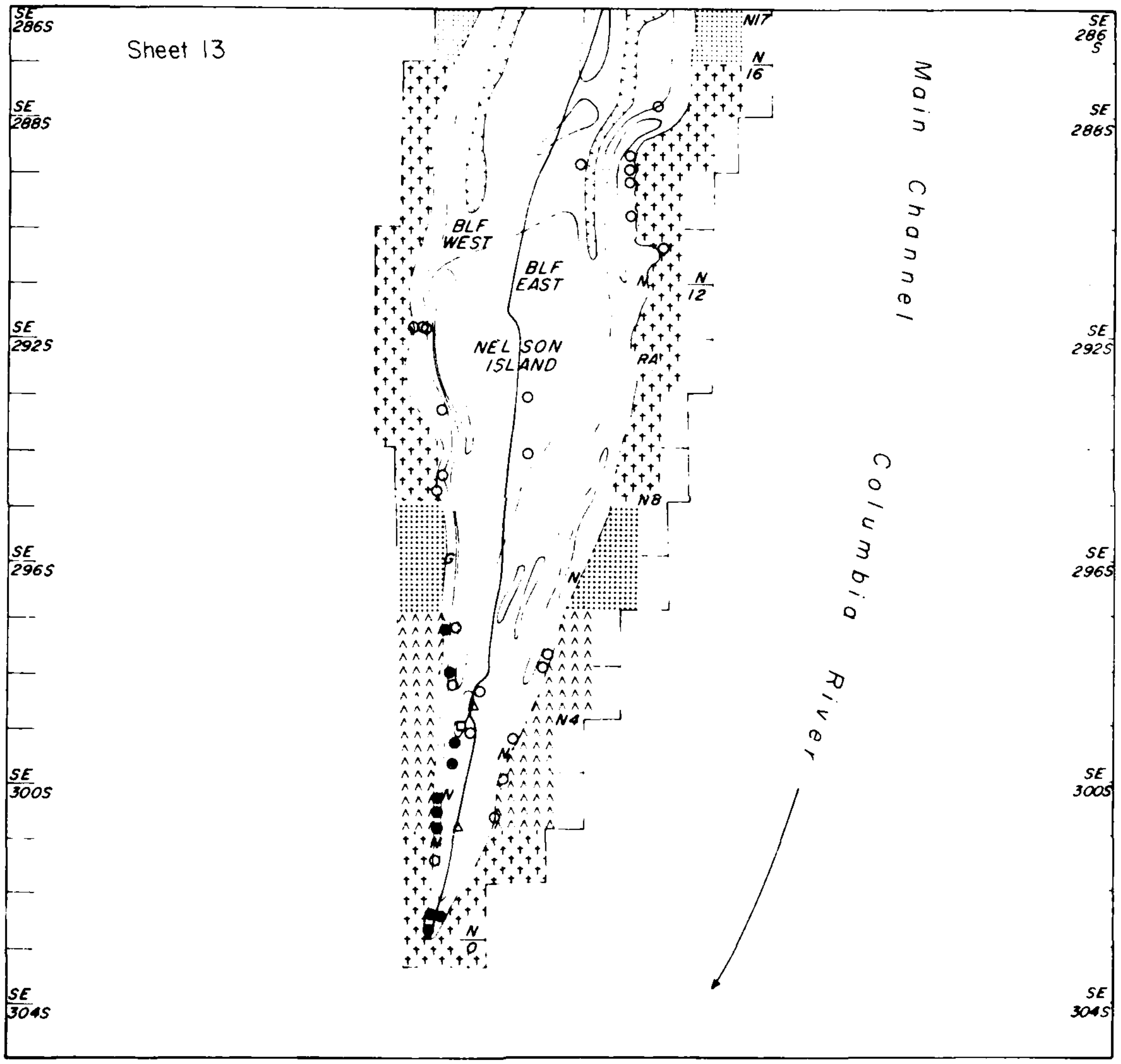
SW 192S
SW 196S
SW 200S
SW 204S
SW 208S
SW 212S
SW 216S
SW 217S
SE 193 S
SE 196 S
SE 200 S
SE 204 S
SE 208 S
SE 212 S
SE 216 S
SE 220 S
SE 223S
BHF
UNINVESTIGATED
BLF WEST
BLF EAST
ISLAND
Main Channel
Columbia River
D 48
D 44
D 40
D 36
D 32
D 28
D 24
D 20
BHG
BREAK
B/C
WBL
EBC
BLF WEST
BLF EAST
BHF
BHG

Sheet 10


Sheet II
SW 217S
BHF
SW 220-225S
BHG
RESIDENTIAL AREA
SW 229S
SW 233S
SW 237S
SW 241S
BHG
FERRY ST
SW 245S
BHF
PARK AREA
SW 249S
SW 252S
D 20
ISLAND D
D 16
D 12
D 8
D 4
BLF WEST
BLF EAST
WBL
EBC
BLF W
BLF E
Main Channel
Columbia River
SE 223S
SE 224S
BHG
SE 228S
D'EWART
SE 230-232S
B/C
SE 236S
SE 240S
SE 244S
SE 248 249 S
BHG
SE 253S
SE 256S


Sheet 12
SW 252S
SW 253
BHF
SW 258-262S
SNYDER ST
BOAT RAMP
SW 266S
GEN LESLIE R GROVES PARK
SW 270S
SW 274S
SW 278S
BHF
SW 282S SOUTHERN SURVEY BOUNDARY WEST SHORE
SW 286S
Main Channel
Columbia
River
E 20
E 16
ISLAND E
BLF WEST
BLF EAST
E 12
E 8
WBL
EBC
E 4
BLF W
BLF E
E1
Rivermile 340
N 24
NELSON IS
BLF WEST
BLF EAST
N 20
N17
SE 256S
SE 257S
S36 S25
TION R28E
BHG
RECLAIM
SE 265S
SE 269S
BHG
SE 273S
BHF
SE 277S
SE 280S
SOUTHERN SURVEY BOUNDARY EAST SHORE
SE 284S
SE 286S


Sheet 13
SE 286S
SE 288S
SE 292S
SE 296S
SE 300S
SE 304S
BLF WEST
BLF EAST
NELSON ISLAND
N17
N/16
N/12
N8
N4
N/0
Main Channel
Columbia River

average 100 m survey unit within the type-area. Standard deviations are calculated for the unweighted means. The unweighted statistics also include the maximum and minimum numbers of items recorded within the various 100 m survey units. The type-areas with pit structures are discussed first, followed by those with high densities of artifacts and/or features, and lastly by the low density type-area.

Pit Structure Area 1 (PSA-1). This cluster is represented by the most statistically unique case in the study area, but it is adjacent to other units with pit structures. It is located near the southern end of Wooded Island on the beach and high alluvial flat (BAF) landform (Figure 34, sheet 2) and encompasses part of sites 45BN41 and 45BN108, previously recorded housepit sites (Figure 12). The outstanding characteristic of this case is the presence of nine probable housepit depressions. Only two other cases contain five or more pit structures. The suite of cultural materials in Pit Structure Area 1 merits little discussion since Table 13 presents most of the relevant information. All four basic activities are represented but less than half of the possible types of artifacts and features are present. Activities other than residence/storage and food preparation are only minimally represented.

In addition to containing the highest number of probable housepits, this single case is contrasted with other pit structure areas on the basis of the absence of many artifacts and feature types. However, little significance is given to those contrasts since only one case is represented by this seemingly distinctive pit structure area.

Pit Structure Area 2 (PSA-2). Eleven cases are included in this type-area. All but one occur near each other or near different pit structure units. They are located within the BAF landform on Island B and Wooded Island, as well as within the beach through high flat (BHF) landforms along the east and west shore (Figure 34, Sheets 2, 3, 5, 6, 12). At least 10 of the PSA-2 cases represent previously recorded sites 45BN31, 45BN32, 45BN40, 45BN41, 45BN108, 45BN163, and 45BN164 (Figure 12). It is likely that the single east shore PSA-2 case remained undocumented prior to our survey, but on the other hand it could represent 45BN19. However, since the locations of the sites recorded during the Smithsonian survey are poorly documented we cannot determine the relationship between 45BN19 and our PSA-2 case.

The breakdown of cases by landform is as follows: (1) six (54.5%) on the island's BLF, (2) four (36.4%) on the west shore's BHF; and, (3) one (9.1%) on the east shore's BHF. As always, pit structure areas are located in survey units with thick deposits of sandy alluvium.

Pit Structure Area 2 contains a wider range of cultural materials than the other pit structure areas. Its distinctive characteristic is the presence of two or three pit structures in all cases. Table 14 illustrates that all basic activities are well represented. A reasonable idea of the typical artifact suite is obtained by considering only those with means greater than or approximating one. As is commonly the situation, most of the artifacts

Table 13. Cultural Material Content for the 100 meter unit that is the Pit Structure Area 1 cluster.

PIT STRUCTURE AREA 1 - (PSA-1)
N = 1

ACTIVITY*	ART./ FEAT.**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	UNWEIGHTED*** MEAN	UNWEIGHTED*** MAX	UNWEIGHTED*** STD	UNWEIGHTED*** %
RES./STOR.	PSF	1668.87	95.62	9.00	9.00	9.00	.	12.08
	NGS	0.00	0.00	0.00	0.00	0.00	.	0.00
PROCUR.	SCBO	0.00	0.00	0.00	0.00	0.00	.	0.00
	SCF	0.00	0.00	0.00	0.00	0.00	.	0.00
	SCSH	2.50	0.14	2.50	2.50	2.50	.	3.36
	RHF	0.00	0.00	0.00	0.00	0.00	.	0.00
PREPAR.	BFCR	50.00	2.86	50.00	50.00	50.00	.	67.11
	DFCR	0.00	0.00	0.00	0.00	0.00	.	0.00
	HFCR	7.00	0.40	7.00	7.00	7.00	.	9.40
	PKC	2.82	0.16	1.00	1.00	1.00	.	1.34
	BTC	0.00	0.00	0.00	0.00	0.00	.	0.00
	GRND	0.00	0.00	0.00	0.00	0.00	.	0.00
PROCESS.	CMT	0.00	0.00	0.00	0.00	0.00	.	0.00
	NMT	0.00	0.00	0.00	0.00	0.00	.	0.00
	BCB	2.82	0.16	1.00	1.00	1.00	.	1.34
	UCB	0.00	0.00	0.00	0.00	0.00	.	0.00
	BCS	0.00	0.00	0.00	0.00	0.00	.	0.00
	UCS	2.82	0.16	1.00	1.00	1.00	.	1.34
TOOL	CCORE	0.00	0.00	0.00	0.00	0.00	.	0.00
MANUF.	CFLK	0.00	0.00	0.00	0.00	0.00	.	0.00
	NCC	5.64	0.32	2.00	2.00	2.00	.	2.68
	NFLK	2.82	0.16	1.00	1.00	1.00	.	1.34

Table 13 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
PROCUR.	:	Food Procurement
PREPAR.	:	Food Preparation
PROCESS.	:	Food Processing
TOOL MANUF	:	Tool Manufacturing

**Key for Artifacts/Features abbreviations:

PSF	:	Pit structure (i.e., housepit) feature
NGS	:	Notched and grooved stone
SCBO	:	Scattered bone density
SCF	:	Shell concentration feature
SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
BFCR	:	Beach/low flat zone, FCR density
DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
UCB	:	Unifacial cobble, battered edge(s)
BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

MIN	:	Minimum number
MAX	:	Maximum number
STD	:	Standard deviation

Table 14. Average Cultural Material Content within 100 meter units in the Pit Structure Area 2 cluster.

PIT STRUCTURE AREA 2 - (PSA-2)
N = 11

ACTIVITY*	ART./ FEAT.**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	UNWEIGHTED*** MEAN	UNWEIGHTED*** MAX	UNWEIGHTED*** STD	UNWEIGHTED*** %
RES./STOR.	PSF	421.43	76.71	2.00	2.27	3.00	0.47	4.13
PROCUR.	NGS	0.77	0.14	0.00	0.27	1.00	0.47	0.49
	SCBO	1.91	0.35	0.00	1.91	14.50	4.28	3.47
	SCF	4.57	0.83	0.00	0.27	1.00	0.47	0.49
	SCSH	1.95	0.35	0.00	1.95	7.00	2.73	3.54
PREPAR.	RHF	42.69	7.77	0.00	2.55	10.00	3.59	4.63
	BFCR	24.36	4.43	0.00	24.36	35.00	12.89	44.27
	DFCR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	HFCR	4.82	0.88	0.00	4.82	14.50	5.64	8.76
PROCESS.	PKC	3.85	0.70	0.00	1.36	4.00	1.21	2.47
	BTC	5.90	1.07	0.00	2.09	16.00	4.70	3.80
	GRND	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	CMT	2.05	0.37	0.00	0.73	2.00	0.90	1.33
	NMT	0.51	0.09	0.00	0.18	1.00	0.40	0.33
	BCB	0.26	0.05	0.00	0.09	1.00	0.30	0.16
	UCB	4.10	0.75	0.00	1.45	10.00	2.91	2.64
TOOL MANUF.	BCS	5.38	0.98	0.00	1.91	8.00	2.55	3.47
	UCS	11.28	2.05	0.00	4.00	30.00	8.74	7.27
	CCORE	0.51	0.09	0.00	0.18	1.00	0.40	0.33
	CFLK	1.28	0.23	0.00	0.45	2.00	0.82	0.82
	NCC	6.15	1.12	0.00	2.18	6.00	2.36	3.96
	NFLK	5.64	1.03	0.00	2.00	6.00	1.90	3.64

Table 14 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
PROCUR.	:	Food Procurement
PREPAR.	:	Food Preparation
PROCESS.	:	Food Processing
TOOL MANUF	:	Tool Manufacturing

**Key for Artifacts/Features abbreviations:

PSF	:	Pit structure (i.e., housepit) feature
NGS	:	Notched and grooved stone
SCBO	:	Scattered bone density
SCF	:	Shell concentration feature
SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
BFCR	:	Beach/low flat zone, FCR density
DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
UCB	:	Unifacial cobble, battered edge(s)
BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

MIN	:	Minimum number
MAX	:	Maximum number
STD	:	Standard deviation

are indicative of tool manufacturing, but the processing artifacts are well represented.

In the correlation coefficient analysis, significance values of 0.0001 are not present, but there are 18 correlation coefficients with values of 0.6 or higher and significance values of 0.03 or better. The results show that tool manufacturing is represented by 72.2% of the significant correlations and spatially related primarily to processing activities and to a lesser degree to preparation activities. Other spatially related activities include food processing and preparation. In the procurement realm, a significant correlation occurs between SCBO and SCSH and between NGS and RHF. CMT is the only artifact or feature significantly correlated with pit structures.

Pit Structure Area 2 can be summarized as a cluster of survey units showing particular evidence of residence and/or storage activities that are spatially related to moderate levels of food processing and preparation activities. (It should be noted that no pit structure area has well represented levels of these activities in comparison to the high density areas.) Tool manufacturing activities are readily apparent and spatially related primarily to processing and preparation activities.

Pit Structure Area 3 (PSA-3). Only two cases are included in this type-area. One is situated on Island D; the other is along the west shore (Figure 34, sheets 3, 5). Both occur in proximity to other pit structure units and encompass parts of previously recorded sites. The Island D cases partially represent 45BN102 and the west shore examples include part of 45BN32 (Figure 12).

The Island D PSA-3 case is on the BAF landform and contains five pit structures, while the west shore case lies on the BHF landform and has six pit structure features. It is primarily the number of pit structures that distinguished PSA-3 from other pit structure type areas. PSA-3 is more similar to PSA-1 in that both exhibit a rather limited range of artifacts, although this is probably because both type-areas have a very limited number of cases.

As can be determined from Table 15 there is considerable variation between the two cases in regard to features and scattered FCR. The Island D case contains 16 FCR and hearth features, four shell features, and a high density of beach zone FCR, while the shore case has no such features and low density of scattered beach zone FCR. The two cases compare more favorably in terms of flaked and nonflaked lithics.

The only readily apparent basic activity represented by PSA-3 is residence and/or storage. Food preparation and the procurement of shellfish are obviously indicated for the Island D case but not for the shore case. Both tool manufacturing and food processing are under-represented in comparison to other type-areas. In general, there is a tendency for activities, other than the residence and/or storage, to be comparatively underrepresented in the pit structure type areas.

Table 15. Average Cultural Material Content within 100 meter units in the Pit Structure Area 3 cluster.

PIT STRUCTURE AREA 3 - (PSA-3)
N = 2

ACTIVITY*	ART./ FEAT.**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	UNWEIGHTED*** MEAN	UNWEIGHTED*** MAX	UNWEIGHTED*** STD	UNWEIGHTED*** %
RES./STOR.	PSF	1019.86	82.07	5.00	5.50	6.00	0.71	10.14
	NGS	1.41	0.11	0.00	0.50	1.00	0.71	0.92
PROCUR.	SCBO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SCF	33.54	2.70	0.00	2.00	4.00	2.83	3.69
	SCSH	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RHF	134.16	10.80	0.00	8.00	16.00	11.31	14.75
PREPAR.	BFCR	28.50	2.29	7.00	28.50	50.00	30.41	52.53
	DFCR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	HFCR	1.25	0.10	0.00	1.25	2.50	1.77	2.30
	PKC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BTC	4.23	0.34	1.00	1.50	2.00	0.71	2.76
	GRND	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROCESS.	CMT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NMT	1.41	0.11	0.00	0.50	1.00	0.71	0.92
	BCB	1.41	0.11	0.00	0.50	1.00	0.71	0.92
	UCB	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BCS	2.82	0.23	0.00	1.00	2.00	1.41	1.84
	UCS	2.82	0.23	0.00	1.00	2.00	1.41	1.84
TOOL	CCORE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MANUF.	CFLK	1.41	0.11	0.00	0.50	1.00	0.71	0.92
	NCC	8.46	0.68	1.00	3.00	5.00	2.83	5.53
	NFLK	1.41	0.11	0.00	0.50	1.00	0.71	0.92

Table 15 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
PROCUR.	:	Food Procurement
PREPAR.	:	Food Preparation
PROCESS.	:	Food Processing
TOOL MANUF	:	Tool Manufacturing

**Key for Artifacts/Features abbreviations:

PSF	:	Pit structure (i.e., housepit) feature
NGS	:	Notched and grooved stone
SCBO	:	Scattered bone density
SCF	:	Shell concentration feature
SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
BFCR	:	Beach/low flat zone, FCR density
DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
UCB	:	Unifacial cobble, battered edge(s)
BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

MIN	:	Minimum number
MAX	:	Maximum number
STD	:	Standard deviation

Pit Structure Area 4 (PSA-4). Seven cases, each having one pit structure, are included in this type-area. They are located on Wooded Island, Islands B and D, and along west shore (Figure 34, sheets 3, 5, 6, and 10). Four cases are on BHF landforms and three are on BAF landforms. Five of the cases are adjacent to, or in proximity to, other pit structure areas; two are isolated units. All seven PSA-4 units are probably represented by previously recorded sites. These are 45BN28, 45BN32, 45BN41, 45BN42, 45BN43, 45BN102, 45BN104, 45BN105, 45BN164, and 45BN165 (Figure 12).

Although it is primarily the number of pit structures that distinguishes PSA-4 from different pit structure areas, there are other important factors. It is distinguished from PSA-1 and PSA-3 by the presence of more artifacts representing processing and tool manufacturing activities. PSA-4 is most similar to PSA-2. There is, however, an apparent difference between PSA-4 and PSA-2; the former is characterized by more scattered bone. The information in Table 16 suggests that all basic activities are well to moderately represented in comparison with other pit structure areas.

Results of the correlation coefficient analysis provide useful information for spatial relationships. In contrast to PSA-2, there are two correlation coefficients with values of greater than 0.9 and significance at the 0.0001 level in the PSA-4 cluster. One is between CCORE and CFLK and the other between BTC and NGS. There are 15 other coefficients with values of 0.8 or higher and significance values of 0.01 or better. The vast majority (93.3%) of significant correlations are between artifacts representing processing activities and those that imply activities other than residence/storage, particularly with artifacts in the tool manufacturing and food preparation realms. Tool manufacturing artifacts correlate most frequently with processing artifacts. It is interesting to note that in spite of the fact that all but one case contains FCR and hearth features, none are significantly correlated with other items. In fact, there are no strong correlations for any kind of feature. However, NFL, UCB, and NMT are significantly correlated with scattered shell.

Pit Structure Area 4 can be considered as a cluster of cases that exhibits less evidence for residence and/or storage than do other pit structure areas. All basic activities are evident. The most common spatial relationships are between processing activities on the one hand and tool manufacturing and food preparation activities on the other.

Since pit structure features played such a major role in the delineation of type-areas, it is necessary to discuss their relationship to previously recorded housepit sites. There are nine such sites in the study area, 45BN31, 45BN32, 45BN41, 45BN45, 45BN105, 45BN108, 45BN163, 45BN168, and 45FR308 (Figure 12). All but three--45BN45, 45BN168, and 45FR308--are represented by one or more of our pit structure areas.

Site 45BN45 is on Island E and 45FR308 is on Island C. During fieldwork we recorded several depressions as possible pit structures on both islands. We did not include them in our inventory of pit

Table 16. Average Cultural Material Content within 100 meter units in the Pit Structure Area 4 cluster.

PIT STRUCTURE AREA 4 - (PSA-4)
N = 7

ACTIVITY*	ART./ FEAT.**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	MEAN	MAX	STD	%
RES./STOR.	PSF	185.43	55.43	1.00	1.00	1.00	0.00	1.96
PROCUR.	NGS	0.81	0.24	0.00	0.29	2.00	0.76	0.57
	SCBO	0.21	0.06	0.00	0.21	0.50	0.27	0.41
	SCF	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SCSH	1.71	0.51	0.00	1.71	7.00	2.61	3.35
PREPAR.	RHF	71.87	21.48	0.00	4.29	11.00	4.23	8.40
	BFCR	21.71	6.49	0.50	21.71	50.00	18.60	42.51
	DFCR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	HFCR	4.86	1.45	0.00	4.86	14.50	5.10	9.52
PROCESS.	PKC	2.01	0.60	0.00	0.71	2.00	0.95	1.39
	BTC	6.85	2.05	0.00	2.43	14.00	5.16	4.76
	GRND	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	CMT	0.81	0.24	0.00	0.29	1.00	0.49	0.57
	NMT	1.21	0.36	0.00	0.43	2.00	0.79	0.84
	BCB	1.21	0.36	0.00	0.43	2.00	0.79	0.84
	UCB	0.40	0.12	0.00	0.14	1.00	0.38	0.27
TOOL MANUF.	BCS	2.01	0.60	0.00	0.71	2.00	0.76	1.39
	UCS	14.91	4.46	0.00	5.29	24.00	8.44	10.36
	CCORE	1.61	0.48	0.00	0.57	3.00	1.13	1.12
	CFLK	5.64	1.69	0.00	2.00	10.00	3.70	3.92
	NCC	4.43	1.32	0.00	1.57	4.00	1.51	3.07
	NFLK	6.85	2.05	0.00	2.43	10.00	3.46	4.76

Table 16 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
PROCUR.	:	Food Procurement
PREPAR.	:	Food Preparation
PROCESS.	:	Food Processing
TOOL MANUF	:	Tool Manufacturing

**Key for Artifacts/Features abbreviations:

PSF	:	Pit structure (i.e., housepit) feature
NGS	:	Notched and grooved stone
SCBO	:	Scattered bone density
SCF	:	Shell concentration feature
SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
BFCR	:	Beach/low flat zone, FCR density
DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
UCB	:	Unifacial cobble, battered edge(s)
BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

MIN	:	Minimum number
MAX	:	Maximum number
STD	:	Standard deviation

structures because the depressions were irregular in shape, the sediments were gravelly, and obvious relic collector's "pot holes" bore close resemblance to our possible pit structures. In other words, the depressions did not meet our criteria for probable pit structures. Site 24BN168 is located on the west shore just south of Wooded Island. While probable pit structure depressions were not observed in the vicinity, we did document buried cultural materials. Pit structures are quite possibly present, but obscured by the hummocky surface which developed as a result of floods and wind action. Under the circumstances, we recognize that pit structures are likely to be present in all three places, but in disturbed and/or obscured settings.

Our confidence in the results of the cluster analysis has been noted, but some additional comments remain to be made. We emphasize the facts that the number of pit structures in each 100 m unit is crucial to the cluster solutions. Obviously, if the number changed or new ones were added to units without pit structures the overall results would be different. By considering all units with pit structures as part of the same general kind of type-area, we partially mitigate the problem. Even so, the problem of the possible presence of undocumented pit structures remains, but that problem is in part due to the very nature of surface surveys. The only available means of dealing with the problem is to state that pit structures in the study area are most likely to occur on landforms characterized by sandy alluvium.

A total of 52 pit structures are recorded within 21, 100 m survey units represented by the four pit structure areas. One other pit structure is recorded at the southern end of the east shore survey area (Figure 34, sheet 12). It is within a BHF landform that is coded as disturbed because most of the beach and cutbank zones have been covered with rip-rap but the cultural materials probably are protected beneath the rip-rap. The total of 53 pit structures should be viewed as a minimum figure. Since our criteria for identifying pit structures were strict, it is likely that there are numerous other pit structures. Half of the 22 units with pit structures are on islands, nine are along the west shore and two are on the east shore (Figure 34). Eighteen (81.8%) of the units with pit structures are adjacent to others with pit structures; only four occur in relative isolation. The latter four can be divided into two groups of two with individual units separated by less than three units without pit structures. There is clearly a tendency for units with pit structures to be near each other. If we consider all units with pit structures separated by 250 m or less to be part of a group, there are seven recorded groups of pit structures in the study area. The seven groups and their number of pit structures are as follows: (1) Wooded Island, with 16; (2) Island B, with 8; (3) Island D, with 6; (4) the west shore, near the north end of Island B, with 13; (5) the west shore, near the south end of Island B, with 5; (6) the west shore, near the south end of Island C, with 2; and (7) the south end of the east shore survey area with 3 (Figure 34).

Fourteen of the 53 recorded pit structures are visible in existing cutbanks; nine are along the west shore, two are on islands, and three are along the east shore. Those on the east shore are buried

deeper and exhibit straighter side walls and flatter floors in comparison with the shallow, saucer shape floor profiles evident in the island and west shore examples. It should also be noted that the east shore examples are in units with more scattered bone than the other units with pit structures. These observed differences may have functional and/or chronological significance, but they may well be due to sampling error instead.

We are reluctant to draw conclusions about these differences between pit structures on the east shore and elsewhere not only because our sample is small and examinations of profiles may not yield adequate information, but also because there are many similarities in regard to the other kinds of artifacts and features that occur in units with pit structures. For example, notched and grooved stone (i.e. "net weights"), bone fragments, scattered mussel shell, FCR and hearth features, and other items occur in conjunction with pit structures regardless of location. Most of the bone on the east shore and elsewhere represents deer size animals, and salmonid vertebra were found in cutbanks in proximity to pit structures both on the east and west shores. Furthermore, the east shore example is part of Pit Structure Area 4 which also includes island and west shore cases. This provides statistical support to our visual inference of basic homogeneity of pit structure type-area similarity in the study area.

Given the present level of information it is probable that the similarities outweigh major chronological and/or functional differences among the various pit structure areas. Units with pit structures tend to be in close proximity to one another and exhibit similar suites of artifacts. All basic activities are usually represented in these units, although intensity and specific spatial relationships vary. We believe these data lend credence to our contention that reasonably large groups of people utilized the area over relatively short periods of time and that these groups employed the same basic subsistence strategies.

The units with pit structures are commonly adjacent, or in proximity, to units that represent one or more of the high density areas (Figure 34). In fact, only the east shore PSA-2 case and one west shore PSA-4 case are not within 100 m of a high density area case. The high density areas, in general, have more artifacts and features per unit than do the pit structure areas. This is most evident when comparing the maximum numbers for artifacts and features, although the mean numbers reflect the tendency as well. While the quantities of artifacts and nonpit structure features are notably different, the items themselves are similar qualitatively. It is primarily the absence of pit structures in conjunction with relatively higher densities of cultural materials that differentiate the pit structure areas from high density areas. Thus, some areas may have been used primarily as residential and storage loci while most of the processing and preparation of food stuffs occurred in adjacent units. This provides still more evidence in support of the concept that most of the materials in the study area are the result of similar strategies practiced by rather large groups of people during the same general time period. In the following subsections we provide more detailed information about the four high density areas derived via the cluster analysis.

High Density Area 1 (HDA-1). Three Island D units constitute this type-area (Figure 34, sheet 10). They probably represent parts of previously recorded sites 45BN43 and 45BN102 (Figure 12). All HDA-1 units are in close proximity to each other and on the same BAF landform. They are also near units with pit structures.

The single most distinctive aspect of this type area is the large number of recorded FCR and hearth features. These three units contain at least 84 such features in addition to a wide range of other artifacts (Table 17). Chert artifacts are conspicuously absent, but flaked lithics made from relatively coarse grain river cobbles are abundant. We have noted that the coarse grain material was probably used primarily in the production of expediency tools. These factors, coupled with the abundance of nonflaked lithics--PKC and BTC--provide a strong indication that HDA-1 designates the locations of very intensive food processing and preparation activities. The presence of notched and grooved stone items along with substantial quantities of scattered shell suggests the emphasis was on aquatic resources. It is our opinion that the aquatic resources, particularly fish, were routinely emphasized everywhere in the study area.

High Density Area 2 (HDA-2). The 14 cases within this type-area are confined to islands and the northern half of the west shore (Figure 34, sheets 1, 2, 4, 5, 6, 10, 12, and 13). Islands B, D, and E, as well as Nelson Island have HDA-2 cases. The HDA-2 cases probably represent parts of several previously recorded sites. These are, 45BN34, 45BN36, 45BN42, 45BN45, 45BN102, 45BN112, 45BN164, 45BN165, 45BN191, and 45BN196 (Figure 12).

The 14 HDA-2 cases occur on four landforms. Nine (64.3%) are island cases; three (21.4%) of these are on the BLF landform, six (42.9%) on BAF. Four cases (28.6%) are within the BSD landform of the west shore and only one (7.1%) is on the BHF. We note, however, that Nelson Island would have been classified as a BHF landform, prior to reservoir construction and the BLF example from Island B is 100 m from the BAF landform. The generalization that high density areas are positively correlated with sandy well-drained sediments is still appropriate if we recognize recent modifications (i.e., flooding) of landforms in the study area.

All but five of the HDA-2 units yield some kind of item considered to represent procurement activities, but the frequencies are low (Table 18). Food preparation is well represented, by the high number of FCR and hearth features as well as by scattered FCR particularly in the beach area. Artifacts associated with tool manufacturing are more common than those that indicate processing. Nonetheless, processing is comparatively well represented.

Very strong correlation coefficients with significance values of 0.0001 occur three times, between BTC and PKC, between NFLK and CFLK, and again between UCS and BCS. These and other correlations significant at or beyond the 0.05 level suggest that processing and tool manufacturing are well represented and spatially related. While 64.3%

Table 17. Average Cultural Material Content for the 100 meter units in the High Density Area 1 cluster.

HIGH DENSITY AREA 1 - (HDA-1)
N = 3

ACTIVITY*	ART./ FEAT.**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	UNWEIGHTED*** MEAN	UNWEIGHTED*** MAX	UNWEIGHTED*** STD	UNWEIGHTED*** %
RES./STOR.	PSF	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROCUR.	NGS	2.82	0.48	0.00	1.00	3.00	1.73	0.98
	SCBO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SCF	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SCSH	11.67	1.99	0.00	11.67	35.00	20.21	11.39
PREPAR.	RHF	469.56	80.22	22.00	28.00	34.00	6.00	27.32
	BFCR	40.00	6.83	35.00	40.00	50.00	8.66	39.03
	DFCR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	HFCR	0.17	0.03	0.00	0.17	0.50	0.29	0.17
PROCESS.	PKC	9.40	1.61	2.00	3.33	4.00	1.15	3.25
	BTC	15.04	2.57	4.00	5.33	6.00	1.15	5.20
	GRND	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	CMT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NMT	0.94	0.16	0.00	0.33	1.00	0.58	0.32
	BCB	9.40	1.61	1.00	3.33	5.00	2.08	3.25
	UCB	0.94	0.16	0.00	0.33	1.00	0.58	0.32
TOOL MANUF.	BCS	4.70	0.80	0.00	1.67	4.00	2.08	1.63
	UCS	12.22	2.09	0.00	4.33	9.00	4.51	4.22
	CCORE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	CFLK	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NCC	5.64	0.96	1.00	2.00	3.00	1.00	1.95
	NFLK	2.82	0.48	0.00	1.00	2.00	1.00	0.98

Table 17 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
PROCUR.	:	Food Procurement
PREPAR.	:	Food Preparation
PROCESS.	:	Food Processing
TOOL MANUF	:	Tool Manufacturing

**Key for Artifacts/Features abbreviations:

PSF	:	Pit structure (i.e., housepit) feature
NGS	:	Notched and grooved stone
SCBO	:	Scattered bone density
SCF	:	Shell concentration feature
SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
BFCR	:	Beach/low flat zone, FCR density
DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
UCB	:	Unifacial cobble, battered edge(s)
BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

MIN	:	Minimum number
MAX	:	Maximum number
STD	:	Standard deviation

Table 18. Average Cultural Material Content for the 100 meter units in the High Density Area 2 cluster.

HIGH DENSITY AREA 2 - (HDA-2)
N = 14

ACTIVITY*	ART./ FEAT.**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	UNWEIGHTED*** MEAN	UNWEIGHTED*** MAX	UNWEIGHTED*** STD	UNWEIGHTED*** %
RES./STOR.	PSF	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NGS	1.41	0.41	0.00	0.50	3.00	1.02	0.52
PROCUR.	SCBO	0.07	0.02	0.00	0.07	0.50	0.18	0.07
	SCF	4.79	1.40	0.00	0.29	2.00	0.61	0.30
	SCSH	0.43	0.13	0.00	0.43	2.50	0.90	0.44
	RHF	155.72	45.41	7.00	9.29	16.00	2.33	9.58
PREPAR.	BFCR	31.96	9.32	7.00	31.96	50.00	17.15	32.95
	DFCR	0.04	0.01	0.00	0.04	0.50	0.13	0.04
	HFCR	2.71	0.79	0.00	2.71	35.00	9.32	2.79
	PKC	5.64	1.64	0.00	2.00	10.00	3.14	2.06
	BTC	14.30	4.17	0.00	5.07	18.00	5.82	5.23
	GRND	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROCESS.	CMT	1.01	0.29	0.00	0.36	2.00	0.63	0.37
	NMT	1.61	0.47	0.00	0.57	3.00	1.02	0.59
	BCB	6.04	1.76	0.00	2.14	9.00	2.66	2.21
	UCB	7.45	2.17	0.00	2.64	15.00	3.86	2.72
	BCS	21.15	6.17	0.00	7.50	24.00	6.82	7.73
	UCS	38.47	11.22	1.00	13.64	47.00	13.18	14.06
TOOL	CCORE	2.62	0.76	0.00	0.93	6.00	1.77	0.96
MANUF.	CFLK	5.84	1.70	0.00	2.07	10.00	3.00	2.13
	NCC	14.70	4.29	0.00	5.21	15.00	5.01	5.37
	NFLK	26.99	7.87	0.00	9.57	50.00	14.85	9.87

Table 18 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
PROCUR.	:	Food Procurement
PREPAR.	:	Food Preparation
PROCESS.	:	Food Processing
TOOL MANUF:		Tool Manufacturing

**Key for Artifacts/Features abbreviations:

PSF	:	Pit structure (i.e., housepit) feature
NGS	:	Notched and grooved stone
SCBO	:	Scattered bone density
SCF	:	Shell concentration feature
SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
BFCR	:	Beach/low flat zone, FCR density
DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
UCB	:	Unifacial cobble, battered edge(s)
BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

MIN	:	Minimum number
MAX	:	Maximum number
STD	:	Standard deviation

of the 14 significant correlations included one or two of the tool manufacturing artifacts, 57.1% of the correlations included artifacts and features representing procurement (NGS), processing (PKC, BTC, NMT, and UCB), and preparation (RHF and HFCR).

The overall picture is that HDA-2 cases represent locations intensively utilized for processing and preparation in conjunction with the manufacture of expediency tools. In essence, HDA-2 is much like HDA-1 except HDA-2 was probably utilized less intensively and has evidence for the manufacture and/or use of chert artifacts. All HDA-2 cases are either adjacent to other high density area cases or to cases that contain pit structures.

High Density Area 3 (HDA-3). The single case in this type-area is on Island D's BAF landform. It is near other high density areas and adjacent to a PSA-4 case (Figure 34, sheet 11). Previously recorded sites 45BN43 and/or 45BN102 (Figure 12) may be part of HDA-3.

High Density Area 3 is distinctive only because almost 200 chert flakes are recorded within its boundaries. The vast majority of the flakes are very small. This case is unique in the study area. The fact that we documented so many chert flakes is certainly related to the physical nature of the survey unit. Vegetation was virtually absent and the ground surface consisted of closely packed gravels in a sandy matrix. As a result, visibility was excellent and particularly conducive to the discovery of tiny flakes.

HDA-3 is also the only type-area that failed to yield any items indicating procurement activities, but there are many individual units that did not yield procurement related artifacts and features. In general, HDA-3 is similar to other high-density type-areas, particularly HDA-4. Tool manufacturing, food processing, and preparation activities are well represented (Table 19). Separation of the HDA-3 case from other high-density areas does highlight the fact that chert artifacts are relatively rare throughout the study area.

High Density Area 4 (HDA-4). The bulk (52, 74.3%) of 100 m units with high densities of cultural materials are included in this type-area. They occur throughout much of the study area (Figure 34, sheets 1-13). About half (23, 44.2%) are on islands. Only Tear Drop Island and Island A fail to exhibit HDA-4 units or for that matter any high density area; they have only low density subareas. Twenty-six (50%) of the cases are along the northern two-thirds of the west shore and three (5.8%) occur in the Taylor Flat area of the east shore. HDA-4 cases encompass parts of most of the previously recorded sites not already mentioned (Figure 12). Areas along the west shore, immediately south and west of Wooded Island, include HDA-4 units where sites have not been recorded previously.

The 52 cases occur on the same four landforms as do HDA-2 cases. Eighteen (34.6%) are on the islands' BLF landform; these are either near BAF landforms or on Nelson Island. Another five (9.6%) are on the islands' BAF landform. Various BSD landforms along the west shore

Table 19. Average Cultural Material Content for the 100 meter units in the High Density Area 3 cluster.

HIGH DENSITY AREA 3 - (HDA-3)
N = 1

ACTIVITY*	ART./ FEAT.**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	UNWEIGHTED*** MEAN	UNWEIGHTED*** MAX	UNWEIGHTED*** STD	UNWEIGHTED*** %
RES./STOR.	PSF	0.00	0.00	0.00	0.00	0.00	.	0.00
	NGS	0.00	0.00	0.00	0.00	0.00	.	0.00
PROCUR.	SCBO	0.00	0.00	0.00	0.00	0.00	.	0.00
	SCF	0.00	0.00	0.00	0.00	0.00	.	0.00
	SCSH	0.00	0.00	0.00	0.00	0.00	.	0.00
	RHF	50.31	6.19	3.00	3.00	3.00	.	1.01
PREPAR.	BFCR	35.00	4.31	35.00	35.00	35.00	.	11.82
	DFCR	0.00	0.00	0.00	0.00	0.00	.	0.00
	HFCR	0.00	0.00	0.00	0.00	0.00	.	0.00
	PKC	2.82	0.35	1.00	1.00	1.00	.	0.34
	BTC	8.46	1.04	3.00	3.00	3.00	.	1.01
	GRND	0.00	0.00	0.00	0.00	0.00	.	0.00
PROCESS.	CMT	0.00	0.00	0.00	0.00	0.00	.	0.00
	NMT	2.82	0.35	1.00	1.00	1.00	.	0.34
	BCB	0.00	0.00	0.00	0.00	0.00	.	0.00
	UCB	11.28	1.39	4.00	4.00	4.00	.	1.35
	BCS	5.64	0.69	2.00	2.00	2.00	.	0.68
	UCS	19.74	2.43	7.00	7.00	7.00	.	2.36
TOOL	CCORE	25.38	3.12	9.00	9.00	9.00	.	3.04
MANUF.	CFLK	558.36	68.69	198.00	198.00	198.00	.	66.89
	NCC	22.56	2.78	8.00	8.00	8.00	.	2.70
	NFLK	70.50	8.67	25.00	25.00	25.00	.	8.45

Table 19 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
PROCUR.	:	Food Procurement
PREPAR.	:	Food Preparation
PROCESS.	:	Food Processing
TOOL MANUF	:	Tool Manufacturing

**Key for Artifacts/Features abbreviations:

PSF	:	Pit structure (i.e., housepit) feature
NGS	:	Notched and grooved stone
SCBO	:	Scattered bone density
SCF	:	Shell concentration feature
SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
BFCR	:	Beach/low flat zone, FCR density
DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
UCB	:	Unifacial cobble, battered edge(s)
BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

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MAX	:	Maximum number
STD	:	Standard deviation

contain 12 (23.1%) of the cases. The remaining 17 (32.7%) cases are within BHF landforms; three are along the east shore and 14 are along the west shore.

All of the 52 cases contain at least two FCR and hearth features and all but one (a west shore BSD example in block WNF1) have scattered FCR ranging from very, very low to very high densities. There is then, little doubt that food preparation is well represented. Table 20 provides the data necessary to demonstrate that procurement activities are moderately represented in comparison to other high density areas. It is also obvious that tool manufacturing and food processing activities are well represented.

A total of 65 correlation coefficients significant at or beyond the 0.05 level were derived from the HDA-4 cases. Of these 35 (53.9%) contained one or two artifacts associated with tool manufacturing activities. Twenty-nine (44.6%) of the significant correlations included one or two artifacts related to processing activities. The most common correlations are between artifacts that suggest tool manufacturing and those that suggest processing activities. This exemplifies the consistent pattern that food processing and tool manufacturing are spatially related activities. Other spatial relationships between food preparation and processing activities are indicated, but they are less common. In the procurement realm, scattered bone is significantly correlated with the BTC and BCB artifacts and NGS is correlated with CCORE.

The HDA-4 cases appear to represent locations that were utilized in a manner similar to other high density areas, but less intensively. Most (84.6%) of the 52, HDA-4 cases are within 100 m of some other high density area case (42 instances) or units with pit structures (two instances). Only 8 (15.4%) cases are relatively isolated. The fact that high density areas and pit structure areas tend to occur in close proximity and exhibit similar kinds of cultural materials has been noted. It is an indication that similar subsistence strategies were employed throughout much of the area and probably represent the activities of rather large groups operating during a relatively short time period.

The various high density areas appear to be differentiated mainly on the basis of the number of FCR and hearth features. The average numbers range from 2 to 28 per 100 m unit. High density areas, on the whole, evidence more intensive utilization with regard to tool manufacturing, food processing, and food preparation than do pit structure areas or low density subareas. Survey units with pit structures tend to be bounded either by high density areas or by low density subareas with more artifacts than the adjacent pit structure unit. This results in the creation of specific loci with high visibility cultural materials. These loci in turn, tend to be separated by areas with relatively fewer cultural materials that are comparatively less obvious.

Table 20. Average Cultural Material Content for the 100 meter units in the High Density Area 4 cluster.

HIGH DENSITY AREA 4 - (HDA-4)
N = 52

ACTIVITY *	ART./ FEAT.**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	UNWEIGHTED*** MEAN	UNWEIGHTED*** MAX	UNWEIGHTED*** STD	UNWEIGHTED*** %
RES./STOR.	PSF	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NGS	0.33	0.24	0.00	0.12	1.00	0.32	0.26
PROCUR.	SCBO	0.35	0.26	0.00	0.35	14.50	2.03	0.76
	SCF	1.61	1.19	0.00	0.10	2.00	0.41	0.22
	SCSH	1.98	1.47	0.00	1.98	14.50	3.48	4.27
	RHF	64.82	48.07	2.00	3.87	7.00	1.43	8.35
PREPAR.	BFCR	22.83	16.93	0.00	22.83	50.00	16.29	49.27
	DFCR	0.24	0.18	0.00	0.24	7.00	1.07	0.52
	HFCR	2.66	1.97	0.00	2.66	50.00	9.75	5.74
	PKC	1.41	1.05	0.00	0.50	6.00	1.18	1.08
	BTC	4.12	3.06	0.00	1.46	8.00	1.92	3.15
	GRND	0.22	0.16	0.00	0.08	4.00	0.55	0.17
PROCESS.	CMT	0.49	0.36	0.00	0.17	4.00	0.73	0.37
	NMT	1.08	0.80	0.00	0.38	3.00	0.82	0.82
	BCB	2.33	1.73	0.00	0.83	10.00	1.70	1.79
	UCB	2.77	2.05	0.00	0.98	7.00	1.78	2.11
	BCS	5.10	3.78	0.00	1.81	9.00	2.16	3.91
	UCS	11.44	8.48	0.00	4.06	26.00	5.07	8.76
TOOL	CCORE	0.54	0.40	0.00	0.19	6.00	0.86	0.41
MANUF.	CFLK	3.36	2.49	0.00	1.19	24.00	3.97	2.57
	NCC	3.69	2.74	0.00	1.31	10.00	1.96	2.83
	NFLK	3.47	2.57	0.00	1.23	15.00	2.31	2.65

Table 20 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
PROCUR.	:	Food Procurement
PREPAR.	:	Food Preparation
PROCESS.	:	Food Processing
TOOL MANUF	:	Tool Manufacturing

**Key for Artifacts/Features abbreviations:

PSF	:	Pit structure (i.e., housepit) feature
NGS	:	Notched and grooved stone
SCBO	:	Scattered bone density
SCF	:	Shell concentration feature
SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
BFCR	:	Beach/low flat zone, FCR density
DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
UCB	:	Unifacial cobble, battered edge(s)
BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

MIN	:	Minimum number
MAX	:	Maximum number
STD	:	Standard deviation

Most of the previously recorded sites in fact represent these highly visible areas and most of the intervening low density areas have not been recorded as sites. A comparison between Figure 12 and Figure 34 illustrates this point. In effect, areas of relatively low densities of cultural materials have been grouped together with areas devoid of cultural materials. Interestingly, the initial cluster analysis produced similar results. The 73 units without recorded aboriginal cultural materials were grouped together with 244 units with cultural materials.

Low Density Area (LDA). The 317 cases in this type area represent 77.7% of the 408 classified, 100 m units. As a group, the members of this cluster are statistically more similar to each other than they are to the members of any other type-area. As noted, the LDA cluster included units with (77%) and without (23%) cultural materials. We believe that almost all of the disturbed units would be part of this type-area had they been included in the cluster analysis. LDA units are scattered throughout the study area, although a clear majority are on the northern ends of islands or along the east shore. All of the units within the east shore's BHG and WTB landforms are in the LDA cluster.

We chose not to consider the 317 units as a viable group. While the units are undoubtedly similar from a statistical perspective, especially in comparison to the pit structure and high density areas, it was obvious to us that from a behavioral standpoint the differences were apparently differences in intensity of utilization and worthy of consideration. The low density area seems to represent the lower end of a utilization continuum that ranges from very intense to minimal to a lack of evidence for utilization.

Table 21 illustrates that the minimum number of artifacts and features in the LDA is always zero, and that the means are, on the whole, lower than those for any other type-area. The maximum figures and the percentages, however, compare favorably with other type-areas. These figures also indicate that four of the five basic activities are clearly represented. Additionally, the results of the correlation coefficient analysis demonstrated that there are strong spatial relationships between most artifacts and features. In fact, there are 61 coefficients significant at the 0.0001 level and many more significant at or beyond the 0.05 level. The high number of significant correlations is, of course, related to the number of cases in the cluster, but they also indicate that spatial relationships are present.

Given that we chose to view units without cultural material differently from units with obvious features and numerous artifacts, it was necessary to reanalyze the LDA cluster. It was obvious that almost any reasonable solution derived from cluster analysis or any other computer assisted classification program ultimately would group some units with cultural materials with units without cultural materials. However, by minimizing the size of the group that contains both units with and without cultural materials this effect would be reduced and the final separation of units on the basis of presence and absence could be done manually. To achieve this the LDA cluster was subdivided. A

Table 21. Average Cultural Material Content for the 100 meter units in the Low Density Area cluster.

LOW DENSITY AREA - (LDA)
N = 317

ACTIVITY*	ART./ FEAT**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	MEAN	MAX	STD	%
RES./STOR.	PSF	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NGS	0.15	0.54	0.00	0.05	2.00	0.25	0.34
PROCUR.	SCBO	0.06	0.22	0.00	0.06	7.00	0.45	0.41
	SCF	0.53	1.92	0.00	0.03	2.00	0.19	0.21
	SCSH	0.95	3.44	0.00	0.95	35.00	3.17	6.52
	RHF	5.03	18.21	0.00	0.30	2.00	0.57	2.06
PREPAR.	BFCR	7.97	28.86	0.00	7.97	50.00	11.53	54.66
	DFCR	0.59	2.14	0.00	0.59	50.00	4.20	4.05
	HFCR	0.44	1.59	0.00	0.44	14.50	1.62	3.02
	PKC	0.34	1.23	0.00	0.12	3.00	0.41	0.82
	BTC	0.60	2.17	0.00	0.21	6.00	0.76	1.44
	GRND	0.02	0.07	0.00	0.01	1.00	0.08	0.07
PROCESS.	CMT	0.15	0.54	0.00	0.05	7.00	0.44	0.34
	NMT	0.15	0.54	0.00	0.05	2.00	0.25	0.34
	BCB	0.53	1.92	0.00	0.19	4.00	0.55	1.30
	UCB	0.59	2.14	0.00	0.21	4.00	0.64	1.44
	BCS	1.62	5.87	0.00	0.57	8.00	1.17	3.91
	UCS	3.62	13.11	0.00	1.28	16.00	2.27	8.78
TOOL	CCORE	0.15	0.54	0.00	0.05	2.00	0.26	0.34
MANUF.	CFLK	0.75	2.72	0.00	0.26	31.00	1.96	1.78
	NCC	1.93	6.99	0.00	0.68	16.00	1.48	4.66
	NFLK	1.45	5.25	0.00	0.51	20.00	1.77	3.50

Table 21 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
PROCUR.	:	Food Procurement
PREPAR.	:	Food Preparation
PROCESS.	:	Food Processing
TOOL MANUF	:	Tool Manufacturing

**Key for Artifacts/Features abbreviations:

PSF	:	Pit structure (i.e., housepit) feature
NGS	:	Notched and grooved stone
SCBO	:	Scattered bone density
SCF	:	Shell concentration feature
SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
BFCR	:	Beach/low flat zone, FCR density
DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
UCB	:	Unifacial cobble, battered edge(s)
BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

MIN	:	Minimum number
MAX	:	Maximum number
STD	:	Standard deviation

cluster analysis was performed on the LDA cases using the same evaluation criteria employed in the initial analysis (see Chapter 3). In the creation of subclusters from the LDA group the variables which appear most important were RHF and BFCR. Table 22 presents the F-ratio scores for all variables in order of descending importance; it also indicates the inferred activity for each variable. The rank order is considerably different from that in the initial cluster analysis (Table 12). However, the RHF variable remains very important and variables representing tool manufacturing are also important. More variables representing processing and procurement activities are represented among the top 10 F-ratio scores than were in the initial cluster analysis. In the following paragraphs we briefly discuss the three subclusters within the LDA cluster.

Low Density Sub-Area 1 (LDS-1). All but two of the units in this subcluster are located along the shore line (Figure 34). Both exceptions are on Nelson Island. Only one unit occupies the WTB landform and none are on BHG landforms. Fourteen (43.8%) of the units are on BSD landforms along the east shore, 10 (31.3%) are on the east shore's BHF landforms, and 5 (15.6%) occupy BHF landforms on the west shore.

The most distinctive aspects of LDS-1 are the comparatively high density of scattered FCR along the beach area and the rather high numbers of artifacts that suggest tool manufacturing activities (Table 23). In general artifacts representing processing activities are poorly represented as are those indicating procurement activities. Correlation coefficients significant at or beyond the 0.05 level indicate that spatial-relationships are most evident for artifacts and features that indicate tool manufacturing and food processing activities.

Low Density Sub-Area 2 (LDS-2). The 59 cases in this subcluster are distributed throughout the study area and are on all landforms (Figure 34). Thirty-three cases (55.9%) are along the west shore; only 10 (17%) are along the east shore. Wooded and Tear Drop Islands as well as Islands C, D, and E encompass the remaining 16 units (27.1%). Units on landforms characterized by gravelly sediments--BLF, WTB, and BHG--account for 30.5% of the LDS-2 cases.

LDS-2 units are distinguished from those in other low density subareas by the presence of at least one FCR or hearth feature, and relatively low frequencies of all other items (Table 24). Only food preparation is moderately well represented, but the other activities are clearly indicated, particularly tool manufacturing. Fewer significant correlations are found between the various artifacts and features in LDS-2 in comparison to those in the LDS-1 cases. While 13 of the 20 LDS-2 correlations significant at the 0.5 level include artifacts representing tool manufacturing, seven are between two kinds of artifacts representing other activities.

Low Density Sub-Area 3 (LDS-3). There are 226 cases in this subcluster, representing 55.4% of the 408, 100 m units. Like other low density subareas, its cases are distributed throughout the study area (Figure

Table 22. F-ratio scores for variables in the sub-cluster analysis

Variable/Artifact or Feature Type (inferred activity)		F-Ratio Score
RHF:	FCR and hearth feature (preparation)	632.708
BFCR:	FCR density, beach zone (preparation)	551.635
NCC:	Non-chert core (tool manufacture)	21.839
UCS:	Unifacial cobble, sharp (tool manufacturing)	20.335
BCS:	Bifacial cobble, sharp (tool manufacturing)	17.753
DFCR:	FCR density, dune zone (preparation)	14.855
CMT:	Chert mod. flake and tool (processing)	14.597
BTC:	Battered cobble (processing)	13.981
SCSH:	Scattered shell (procurement)	13.095
NFLK:	Non-chert flake (tool manufacturing)	13.006
SCBO:	Scattered bone (procurement)	12.083
CCORE:	Chert core (tool manufacturing)	11.354
CFLK:	Chert flake (tool manufacturing)	10.995
SCF:	Shell concentration feature (procurement)	9.038
NMT:	Non-chert mod. flake and tool (processing)	7.657
PKC:	Pecked cobble (processing)	7.037
BCB:	Bifacial cobble, battered (processing)	6.978
UCB:	Unifacial cobble, battered (processing)	6.398
NGS:	Notched and grooved stone (procurement)	5.158
GRND:	Ground stone (processing)	1.843
HFCR:	FCR density, higher zone (preparation)	1.440
PSF:	Pit structure feature (residence/storage)	0.000

Table 23. Average Cultural Material Content within 100 meter units in the Low Density Subarea 1 cluster.

LOW DENSITY SUB-AREA 1 - (LDS-1)
N = 32

ACTIVITY*	ART./ FEAT**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	MEAN	MAX	STD	%
RES./STOR.	PSF	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NGS	0.44	0.45	0.00	0.16	2.00	0.51	0.26
PROCUR.	SCBO	0.42	0.43	0.00	0.42	7.00	1.35	0.69
	SCF	2.62	2.69	0.00	0.16	2.00	0.45	0.26
	SCSH	3.56	3.65	0.00	3.56	35.00	7.01	5.82
	RHF	9.43	9.68	0.00	0.56	1.00	0.50	0.92
PREPAR.	BFCR	37.64	38.62	14.50	37.64	50.00	7.56	61.53
	DFCR	4.22	4.33	0.00	4.22	50.00	12.38	6.90
	HFCR	0.88	0.90	0.00	0.88	14.50	2.65	1.44
	PKC	0.79	0.81	0.00	0.28	2.00	0.63	0.46
	BTC	2.03	2.08	0.00	0.72	6.00	1.44	1.18
	GRND	0.09	0.09	0.00	0.03	1.00	0.18	0.05
PROCESS.	CMT	1.23	1.26	0.00	0.44	7.00	1.32	0.72
	NMT	0.53	0.54	0.00	0.19	2.00	0.47	0.31
	BCB	1.23	1.26	0.00	0.44	4.00	0.91	0.72
	UCB	1.15	1.18	0.00	0.41	3.00	0.76	0.67
	BCS	4.49	4.61	0.00	1.59	8.00	2.08	2.60
	UCS	9.43	9.68	0.00	3.34	11.00	3.20	5.46
TOOL	CCORE	0.62	0.64	0.00	0.22	2.00	0.49	0.36
MANUF.	CFLK	4.93	5.06	0.00	1.75	31.00	5.79	2.86
	NCC	6.17	6.33	0.00	2.19	16.00	3.13	3.58
	NFLK	5.55	5.70	0.00	1.97	10.00	3.24	3.22

Table 23 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
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**Key for Artifacts/Features abbreviations:

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SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
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DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
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BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

MIN	:	Minimum number
MAX	:	Maximum number
STD	:	Standard deviation

Table 24. Average Cultural Material Content within 100 meter units in the Low Density Subarea 2 cluster.

LOW DENSITY SUB-AREA 2 - (LDS-2)
N = 59

ACTIVITY*	ART./ FEAT**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	UNWEIGHTED*** MEAN	UNWEIGHTED*** MAX	UNWEIGHTED*** STD	UNWEIGHTED*** %
RES./STOR.	PSF	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NGS	0.29	0.59	0.00	0.10	1.00	0.30	0.56
PROCUR.	SCBO	0.03	0.06	0.00	0.03	0.50	0.13	0.17
	SCF	0.85	1.72	0.00	0.05	1.00	0.22	0.28
	SCSH	0.80	1.62	0.00	0.80	7.00	1.67	4.49
	RHF	21.89	44.25	1.00	1.31	2.00	0.46	7.35
PREPAR.	BFCR	8.93	18.05	0.00	8.93	14.50	5.23	50.11
	DFCR	0.58	1.17	0.00	0.58	14.50	2.14	3.25
	HFCR	0.48	0.97	0.00	0.48	7.00	1.42	2.69
	PKC	0.67	1.35	0.00	0.24	3.00	0.60	1.35
	BTC	1.24	2.51	0.00	0.44	6.00	1.13	2.47
	GRND	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROCESS.	CMT	0.10	0.20	0.00	0.03	1.00	0.18	0.17
	NMT	0.29	0.59	0.00	0.10	1.00	0.30	0.56
	BCB	0.91	1.84	0.00	0.32	2.00	0.63	1.80
	UCB	1.15	2.32	0.00	0.41	4.00	1.02	2.30
	BCS	2.15	4.35	0.00	0.76	5.00	1.28	4.26
	UCS	4.92	9.95	0.00	1.75	10.00	2.57	9.82
TOOL	CCORE	0.33	0.67	0.00	0.12	2.00	0.42	0.67
MANUF.	CFLK	0.57	1.15	0.00	0.20	4.00	0.71	1.12
	NCC	2.10	4.24	0.00	0.75	9.00	1.41	4.21
	NFLK	1.19	2.41	0.00	0.42	3.00	0.70	2.36

Table 24 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
PROCUR.	:	Food Procurement
PREPAR.	:	Food Preparation
PROCESS.	:	Food Processing
TOOL MANUF	:	Tool Manufacturing

**Key for Artifacts/Features abbreviations:

PSF	:	Pit structure (i.e., housepit) feature
NGS	:	Notched and grooved stone
SCBO	:	Scattered bone density
SCF	:	Shell concentration feature
SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
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DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
UCB	:	Unifacial cobble, battered edge(s)
BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

MIN	:	Minimum number
MAX	:	Maximum number
STD	:	Standard deviation

34). LDS-3 contains most of the units characterized by gravelly sediments. Those units on the BLF, WTB, and BHG landforms account for 66.8% of LDS-3 cases. The islands' BLF landforms account for the largest percentage of the cases and the lowest percentage of cases are on the islands' BAF landforms.

The outstanding characteristic of the LDS-3 cases is the limited occurrence of cultural materials. None of the units have FCR or hearth features and only two have shell concentration features. Scattered FCR represents the bulk of cultural material. However, scattered shell and numerous tool manufacturing artifacts occur in many of the units (Table 25). The four basic activities are at best poorly represented. Results of the correlation coefficient analysis show relatively few significant correlations. Of the 25 significant correlations only three (HFCR/SCF, NMT/SCF, and UCB/BFCR) are between artifacts that do not represent tool manufacturing. While all four basic activities are represented, we suspect that procurement, processing, and preparation occurred at low levels, in comparison to tool manufacturing.

Since LDS-3 contains units without any aboriginal cultural materials we manually divided it into subsets: (1) the 153 units with definite aboriginal materials; (2) the 22 units without definite aboriginal materials, but with cobble piles; and (3) the 51 units in which neither cobble piles nor aboriginal cultural materials are recorded. The subsets of LDS-4 are illustrated and plotted in Figure 34 as are the 220, 50 m units considered to be too disturbed for use in the cluster analysis.

We have demonstrated that the majority (82.1%) of the study area that is not severely disturbed exhibits an almost continuous distribution of aboriginal cultural materials. Figure 34 provides a graphic illustration of the distribution of cultural materials according to our type-area classification scheme. There is an obvious tendency for areas with substantial quantities of cultural materials to be on landforms characterized by sandy sediments. Readily detectable differences among the type-areas are evidenced primarily in terms of the frequencies of artifact and feature types. At the survey level, presence/absence of the various types of artifacts and features makes the survey units appear homogeneous across most of the study area. We recognize that at the level of specific functional activities there are differences within our feature types and artifact types and hence many of the survey units, even every unit, may be unique. These differences can be studied using different approaches.

The available evidence suggests that most of the cultural materials accumulated over a relatively short period of time, probably much less than 2,000 years. It is likely that most intensive aboriginal utilization of the study area began not more than 1,500 years ago and continued into the historic period. We suspect that relatively large groups were in the area primarily to secure substantial quantities of fish. Shellfish, mammals, and perhaps vegetal items provided additional foodstuffs. The presence of pit structure features (e.g., housepits) indicates the aboriginal populations probably stayed in the area more

Table 25. Average Cultural Material Content within 100 meter units in the Low Density Subarea 3 cluster.

LOW DENSITY SUB-AREA 3 - (LDS-3)
N = 226

ACTIVITY*	ART./ FEAT**	WEIGHTED MEAN	WEIGHTED %	UNWEIGHTED*** MIN	UNWEIGHTED*** MEAN	UNWEIGHTED*** MAX	UNWEIGHTED*** STD	UNWEIGHTED*** %
RES./STOR.	PSF	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	NGS	0.07	0.58	0.00	0.03	1.00	0.16	0.42
PROCUR.	SCBO	0.02	0.17	0.00	0.02	0.50	0.10	0.28
	SCF	0.15	1.25	0.00	0.01	1.00	0.09	0.14
	SCSH	0.62	5.15	0.00	0.62	14.50	2.36	8.64
	RHF	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PREPAR.	BFCR	3.52	29.26	0.00	3.52	14.50	5.14	49.03
	DFCR	0.08	0.67	0.00	0.08	7.00	0.55	1.11
	HFCR	0.36	2.99	0.00	0.36	14.50	1.48	5.01
	PKC	0.19	1.58	0.00	0.07	2.00	0.28	0.97
	BTC	0.24	2.00	0.00	0.08	3.00	0.36	1.11
	GRND	0.01	0.08	0.00	0.00	1.00	0.07	0.00
PROCESS.	CMT	0.01	0.08	0.00	0.00	1.00	0.07	0.00
	NMT	0.06	0.50	0.00	0.02	2.00	0.17	0.28
	BCB	0.34	2.83	0.00	0.12	4.00	0.44	1.67
	UCB	0.36	2.99	0.00	0.13	4.00	0.45	1.81
	BCS	1.07	8.89	0.00	0.38	7.00	0.84	5.29
	UCS	2.46	20.45	0.00	0.87	16.00	1.82	12.12
TOOL	CCORE	0.04	0.33	0.00	0.01	1.00	0.11	0.14
MANUF.	CFLK	0.20	1.66	0.00	0.07	7.00	0.53	0.97
	NCC	1.29	10.72	0.00	0.46	4.00	0.91	6.41
	NFLK	0.94	7.81	0.00	0.33	20.00	1.58	4.60

Table 25 (Continued)

*Key for activity abbreviations:

RES.STOR.	:	Residence/Storage
PROCUR.	:	Food Procurement
PREPAR.	:	Food Preparation
PROCESS.	:	Food Processing
TOOL MANUF	:	Tool Manufacturing

**Key for Artifacts/Features abbreviations:

PSF	:	Pit structure (i.e., housepit) feature
NGS	:	Notched and grooved stone
SCBO	:	Scattered bone density
SCF	:	Shell concentration feature
SCSH	:	Scattered shell density
RHF	:	Fire-cracked rock or hearth feature
BFCR	:	Beach/low flat zone, FCR density
DFCR	:	Dune/slump zone, FCR density
HFCR	:	High flat/cutbank, FCR density
PKC	:	Pecked cobble
BTC	:	Battered cobble
GRND	:	Ground stone
CMT	:	Chert modified flakes and tools
NMT	:	Nonchert modified flakes and tools
BCB	:	Bifacial cobble, battered edge(s)
UCB	:	Unifacial cobble, battered edge(s)
BCS	:	Bifacial cobble, sharp edge(s)
UCS	:	Unifacial cobble, sharp edge(s)
CCORE	:	Chert core
CFLK	:	Chert flake
NCC	:	Nonchert core and core-like types
NFLK	:	Nonchert flake

***Key for Unweighted abbreviations:

MIN	:	Minimum number
MAX	:	Maximum number
STD	:	Standard deviation

than a few days or weeks and at least on a seasonal basis. In addition, the cultural material evidence suggests that procurement of foodstuffs, tool manufacturing, processing of foodstuffs, and preparation of the foods for consumption or storage were the basic activities carried out in the area. The evidence also indicates that all these activities took place in the same location. Pit structure areas tend to be in close proximity to areas with high densities of cultural materials, but high density areas occur independently. Such areas may represent settings that provided more ready access to exploitable resources, namely fish. The extensive areas of low density cultural materials suggest that the exploitable resources were widespread and utilized accordingly. In the following chapter we discuss these ideas in more detail and address the basic research questions outlined earlier in the report.

CHAPTER 5

DISCUSSION AND CONCLUSIONS

At the outset of this report a series of basic research questions or objectives were outlined. The potential significance of the cultural resources within the study area is evaluated in the light of these research questions. If it can be demonstrated that the study area has the potential to contribute information useful in addressing these and other important questions, then it is likely to contain significant cultural resources. In the following sections we address the various questions and make additional comments regarding the kinds of information that could be gleaned from the area's cultural resources.

Addressing the Research Questions

Do Artifact Assemblages Reveal a Dichotomy between Winter Village and Fishing Camps or Distinctions Among Other Kinds of Sites Present?

Winter villages are customarily designated by the presence of housepits. Fishing camps are likely to be indicated by a number of nonperishable artifacts, but notched pebbles and grooved cobbles (i.e., "net weights") are the most obvious. Both kinds of cultural remains occur in the survey area, however, they are not mutually exclusive (i.e., spatially separated). In addition, there are areas that have neither housepits nor "net weights". We would respond to the stated question with a generally negative answer.

It has been noted that ethnographic evidence originally synthesized by Ray (1933) has been used to develop the "Sanpoil-Nespelem Model of Plateau Culture." It was that information that has been used to suggest that during the last 3,000-4,000 years only winter villages and fishing camps should be located along the river. At least in the Priest Rapids area of the Columbia River, Dancy's (1973, 1976) work has suggested that the ethnographic pattern was established 3,500 years ago. His work indicated that only one major kind of site (he used the term "aggregrate"), the winter village, and an unassigned kind of site representing the spring and fall exploitation of riverine resources occurred on the floodplain. However, he did not have access to intensive survey data from along the river. Rather he relied primarily upon the results of earlier survey and excavation projects and he notes that cultural materials were scattered everywhere (Dancy 1973). Nonetheless, Dancy (1976:158) states that only winter villages (Class A aggregrates) and a single, functionally unassigned (Class U-2 aggregrate) kind of site were found on the floodplain.

Our survey area exhibits an almost continual distribution of cultural materials and it is virtually impossible to delimit site boundaries as the difference between presence and absence of cultural

material. In some sense the 100 meter survey units can be considered as subdivisions of larger sites. It could also be argued that the isolated and contiguous pit structure areas, as well as the high density areas, and at least the first two low density subareas (LDS-1 and LDS-2) are sites in and of themselves. The Low Density Subarea-3 (LDS-3) group could be viewed as areas lacking enough material to be considered sites and be identified as discrete areas that separate sites. This approach, however, would be counterproductive since it could be inferred that these areas of very low density of cultural materials are less likely to contribute useful information. Rather, it seems more productive to view the area as a series of contiguous sites that were utilized differentially in terms of intensity and specific activities.

We have indicated that the kinds of artifacts, and for that matter, the kinds of features are remarkably homogeneous throughout the study area as measured by our analytical approach. The primary differences visible in survey, are quantitative rather than qualitative. In other words, the suite of artifacts that occur in immediate proximity to housepits also is present in the specific areas without housepits, but with "net weights" added in. Furthermore, the specific survey units with neither housepits nor "net weights" also exhibit a similar suite of artifacts. In short, artifact assemblages, as we have monitored them, do not reveal an obvious dichotomy between winter villages and fishing camps or any other kind of site. The results of this project are inconsistent with those derived by Dancy (1973, 1976). The implications of these apparent differences remain to be explored.

There are differences in the suites of artifacts that occur along the portion of the east shore in comparison with other areas, as we have argued elsewhere in the text. The relatively low frequencies of processing tools and FCR features considered to be indicative of food preparation in comparison to the high frequency of tool manufacturing of artifacts suggests that portions of the beach through high gravel terrace (BHG) and beach to White Bluffs (WTB) landforms were used primarily as areas for the procurement of lithic raw materials. It may be that those areas contain relatively high percentages of better quality raw materials. Specific problem oriented research would be necessary to adequately address this problem.

Our argument of homogeneity of artifact assemblages must be understood in terms of our analytical methods. We suspect that differences are present and could be measured by addressing different questions and applying different methods. For example, the very nature of the cultural materials (i.e., their abundance and widespread distribution) is conducive to the study of lithic technology via problem oriented questions concerning the differential use of raw materials and behavioral implications of such patterned use.

Assuming That Temporally Diagnostic Artifacts (e.g., Projectile Points) Are Relatively Common and Sites Can Be Stratified According to Age, Does the Archaeological Record Indicate Little Change in Settlement Systems During the Last 3,000-4,000 Years?

We have taken the position that most of the cultural materials in the study area probably represent a relatively short period of time. With only six projectile points from the entire area and with not more than one from any one survey unit it would be spurious to employ them as diagnostic artifacts to temporally stratify either the survey units or sites. The survey data, as we employed them, provide little indication of changes in the basic settlement patterns. This is largely due to the fact that we have relatively few chronological indices and many of the landforms we surveyed, especially those with abundant materials, are not likely to be more than 2,000 years old, much less 4,000 years old. In other words, we cannot adequately address the question with survey information. It is interesting, however, to note that our results do not reveal obvious dichotomies between site types during the time period of utilization as we presently understand it. The dichotomy is crucial to the ethnographic model and its applicability to the prehistoric period. Since we fail to find the predicted differences, this suggests that the appropriateness of the model needs to be questioned and examined in great detail.

Even though we do not presently have the data necessary to respond to the above question, the study area contains the required information, but much of it is literally buried and accessible primarily through excavation. Fine-grain chronological controls are available in the form of abundant charcoal and bone-rich deposits that could be dated using radiocarbon techniques. Our ideas concerning the recency of aboriginal materials can be assessed by excavating and dating these deposits. Not only could useful information be obtained regarding settlement patterns, but also concerning changes in subsistence strategies. Datable archaeological deposits are so abundant that it would be possible to compare and contrast behavioral patterns and examine cultural processes within chronological increments probably representing periods of time on the order of centuries.

Can Discrete Areas Be Classified According to the Kinds of Cultural Materials and/or Their Densities?

It is clearly possible to classify the study area in terms of kinds and/or densities of cultural materials. The results of our analyses demonstrate that at least nine type-areas can be recognized and empirically defined. The type-areas provide us with a means by which to better understand the distribution of cultural materials. Our results suggest that the differences among type-areas provide strong indications of the intensity of utilization.

In all probability other approaches would yield different results. For example, it would be possible to classify areas with housepits according to the size or depth of the structures. The kinds of artifacts associated with different styles of housepits could be

examined in detail with the objective of detecting differences in specific artifact assemblages. However, these approaches are not appropriate to survey, rather they are best carried out via excavation procedures.

We expect that there are detectable differences within and among the various type-areas, beyond those that have been discussed. Elucidation of these presumed differences must be approached by asking different questions and using different and/or more refined analytical techniques. Recognition of this does not lessen the importance of our results. Even more meaningful information can be gathered from the study area, but it should be done so, and is likely to come, only in pursuit of problem oriented research.

Are Given Type-Areas of Cultural Materials Most Commonly Associated with Given Topographic Settings or Landforms?

Those type-areas with either housepits or abundant cultural materials--Pit Structure Areas and High Density Areas--are confined primarily to landforms characterized by sandy sediments, namely the beach through sand dune, beach through high flat, and beach and high alluvial flat landforms (BSD, BHF, and BAF, respectively). The only exception is the gravelly beach and low flat (BLF) landform of the islands. As we have pointed out, the survey units within the BLF landform and classified as High density areas are always in proximity to the sandy BAF landform. Units classified as Low Density areas occur throughout the survey area, but a clear majority are on the gravelly landforms namely, beaches and low flats, beach through high gravel terrace, and beach to White Bluffs (BLF, BHG, and WTB, respectively).

Several factors may account for these correlations. The landforms characterized by sandy sediments have zones which are well above normal seasonal high water levels and, thus, afford some protection from seasonal floods. Additionally, the sandy-sediment landforms tend to encompass relatively large, flat surfaces. Not only do the flat surfaces provide ample habitation space but they are well drained also. Both of these factors would be important when groups occupy an area over a relatively long period of time, particularly during the fall and winter when rains are common. The gravelly sediment landforms do not offer these advantages. The beaches and low flat (BLF) landform is lower in the landscape and more subject to seasonal high water. The other gravelly landforms have only small areas of flat surfaces which would not be conducive to occupation by larger groups of people.

One other observed pattern concerns the relationship between high density type-areas and the boulder/cobble fields (see Figure 34). There is a strong tendency for units within the high density type-areas to be in proximity to the boulder/cobble fields along the west shore. This tendency is less evident for units within the pit structure type-areas. An explanation for this apparent pattern is that the boulder/cobble fields protrude into the river and create eddies, which

tend to attract anadromous fish seeking resting places. Groups of people exploiting this food resource would be likely to concentrate their efforts in locations where the resource was readily available, in this case the boulder/cobble fields. We expect that the islands also were utilized intensively because they maximize access to anadromous fish and afford the opportunity to retrieve fish from both the main and minor channels. Islands would also provide some protection of stored foods from animals that characteristically rob food caches.

Examination of relationships between type-areas and landforms has yielded information useful in explaining such distributions of cultural materials but we have only begun to understand the implications. More detailed inquiries are likely to produce even more significant information that can be used to generate more powerful explanatory statements.

Is It Possible and Reasonable to Infer Activities from the Different Kinds of Type-Areas?

Analysis of the data indicate that there are differences both in qualitative terms and in the relative importance of the kinds of basic activities represented by the artifactual content of different type-areas. In that sense we have demonstrated that it is possible and reasonable to infer activities, at least basic activities.

Five basic activities--residence/storage, food procurement, food preparation, food processing, and tool manufacturing--are manifested in the survey area. Pit structure features (i.e., housepits) are the only kind of artifact/feature considered indicative of residence/storage activity and, as might be expected, that basic activity is restricted to units comprising the four pit structures type-areas. The kinds of artifacts and features considered to be indicative of procurement activities occur most frequently in the units forming pit structure or high density type-areas; they tend to be poorly represented in units forming the low density type-area. The inferred procurement activities as discussed previously represent mostly one subset of the subsistence system and/or procurement activities that took place elsewhere. There are also many individual survey units within the low density subareas that exhibit only evidence of tool manufacturing activities, whereas units typical of the high density type-areas evidence intensive food processing and preparation activities in addition to tool manufacturing activities. The foregoing examples illustrate qualitative differences.

We have also argued that most of the differences within the three broad kinds of type-areas--the Pit Structure Areas, the High Density Areas, and the Low Density Area--are quantitative ones. For example, High Density Area 1 (HDA-1) units typically exhibit far more fire-cracked rock features than do High Density Area 2 (HDA-3) units and food processing activities are much better represented in the former type-area. In presence/absence terms, the various artifact and feature types, excepting pit structure features, show remarkable homogeneity across landforms and type-areas. This means that most of our types co-

occur across most of the survey area. The analytical methods we employed allow us to detect differences in the frequencies of these artifacts and features; the approach also permits us to monitor intensity differences in the relationships between inferred activities.

As noted earlier, we certainly recognize that other important differences are manifested in the area but remain undetected by our analytical methods. This is a reflection of the methods and the questions we asked, not the archaeological record. Further work in the project area could be directed toward detecting and explaining other differences. For example, we are convinced that there are functional differences among the fire-cracked rock and hearth features. Some may be indicative of stone boiling, others of pit roasting, and still others of smoking/drying foodstuffs. Concern with specific functional differences becomes an issue only after the presence of different kinds of features is documented. That the study area has the potential to address such problems enhances its significance.

Concluding Comments

The primary purpose of this project is to assess the area's cultural resources in terms of potential eligibility for inclusion on the National Register of Historic Places. Assessment of the cultural resources takes place within a regional theoretical framework that forms the basis of the project's research objectives. Two prevailing ideas about late prehistoric land use in the plateau are assessed using the survey data. One relates to detecting differences between winter villages and fishing camps, the other deals with the concept that site locations and contents have remained essentially static over the past 3,000-4,000 years. Ancillary questions concern the classification of type-areas, relationships between type-areas and topographic settings, and between type-areas and inferred activities.

The results of our analyses indicate that artifact assemblages do not reveal an obvious dichotomy between winter villages and fishing camps. Rather, the suite of artifacts and features characteristic of locations with housepits is also characteristic of areas without housepits. Many of the differences we detected crosscut areas with and without housepits; the most obvious differences in the suites of artifacts are quantitative. We suspect that qualitative differences are also present, but they can be measured only by addressing different questions and applying the appropriate methods.

Survey data provide little indication of change in "site" content and location within the project area. While we suspect the area was utilized primarily during the last 1,500-1,000 years or less, this is based mainly on limited geologic information. The stylistic attributes of some "diagnostic artifacts" (i.e., projectile points) recorded in the area only hint of a longer period of utilization. However, the outlook is more encouraging. Dateable archaeological deposits are abundant, making it possible to compare and contrast

These comparisons lead us to speculate that the groups who routinely utilized the study area may have had their more permanent residences near the mouths of the Yakima and Snake rivers. Seen in this light, the channel islands and boulder/cobble fields could be considered to represent an important fishery or special use area utilized by groups operating from large winter villages. It is suggested that the project area may have functioned as a locality for what might be called "field camps" situated beyond the foraging radius of major population centers or winter villages. The area may have been occupied for several weeks at a time by relatively large groups of people involved in procuring, preparing and processing large quantities of fish, primarily for storage purposes. Subsequently, the processed fish could be transported to the more permanent winter villages. Occupation of "field camps" would be an effective means to maximize acquisition of large quantitis of storable foods while minimizing energy expanded in transportation. This explanation also would account for the large number of fire-cracked rock features considered to represent preparation of fish for consumption and storage. In this sense, the cultural materials in the area would represent seasonal camps occupied and reoccupied long enough to merit construction of a few semipermanent dwellings and/or storage facilities. Thus it would be expected that "sites" would exhibit characteristics of both "fishing camp" and "winter villages." Alternately, the housepit locations could represent traditional, but small winter villages not used intensively enough to result in the accumulation of midden deposits, exotic items, and large quantities of high quality lithic material. Additional research is necessary to elucidate relationships between the area's cultural resources and the "Sanpoil-Nespelem Model of Plateau Culture" or some other model for land use patterns.

In this report we have described and discussed the results of an inventory level survey designed to gather data necessary to assess the area's cultural resources in terms of its significance according to criteria established for the National Register of Historic Places. In many situations it is neither practical nor possible to gather enough information from a surface survey to adequately evaluate the resources. However, the cultural resources manifested on the surface in the project area exhibit exceptional integrity. Furthermore, we documented a great deal of information about buried remains by examining cultural deposits exposed in existing cutbanks. Given these conditions, it is our opinion that we were able to gather enough information to assess the area in terms of established criteria, without resorting to the more destructive technique of test excavation.

Simply stated, the often held assumption that cultural remains, visible from the surface, have been tainted excessively by "disturbances" did not hold for the survey area. This does not mean that a nonsite survey is always appropriate or more effective than the traditional site survey and subsequent testing approach. Rather, this nonsite survey was designed specifically for the Upper McNary Reservoir area given the nature and distribution of cultural material and it has proven to be both effective and efficient in gathering considerable data about a large area. It is also likely that the approach would be useful in similar areas. The nonsite survey, however, should not be viewed as

behavioral patterns and examine cultural processes within relatively brief chronological increments.

Classification of the study area in terms of type-areas provides a means to better understand the almost continuous distribution of cultural materials. There are clear differences in the distribution of the three broad kinds of type-areas--Pit Structure Areas, High Density Areas, and the Low Density Area--across the landscape. The indication is that the groups of people exploiting food resources, probably anadromous fish, concentrated their efforts in locations where the resource was most readily available. These are the boulder/cobble fields near landforms characterized by sandy sediments and on the islands.

Results of the activity analysis show that lithic tool manufacturing activities are the most widespread. They differentially co-occur with food processing and preparation activities. Residence and/or storage activities, by definition, occur only where pit structure features (i.e., housepits) are located. Survey units with housepits tend to be in proximity to high density type-areas that evidence procurement activities, particularly of aquatic food resources.

To summarize our ideas, it is likely that most intensive aboriginal utilization of the study area began not more than 1,500-1,000 years ago and continued into the historic period. We suspect that relatively large groups were in the area primarily to secure and prepare substantial quantities of anadromous fish for immediate consumption and, more importantly, for storage. Shellfish, game animals, and perhaps plants provided supplemental food resources.

Our tentative evidence indicates that most utilization of the area probably occurred during the late summer and fall when water levels were low and anadromous fish were abundant. The occurrence of many FCR features below the seasonal high water level lends credence to this suggestion. Shellfish remains are abundant and provide additional evidence for late summer and fall utilization. This is because the preferred aquatic habitat of shellfish is one with sandy sediments and these areas are not readily accessible during periods of high water.

Even though housepits occur in the area, we are reticent to conclude that these represent winter villages in the traditional sense of the term. Also, not all depressions are housepits. Excavation information from other areas of the plateau has demonstrated that surface depressions are also manifestations of storage and roasting pits (Mierendorf 1981). The result is that surface indications alone are not sufficient to infer the existence of housepits. However, since we also have pit structures exposed in cutbanks, we are confident that housepits are present in the survey area. Traditionally, winter villages tend to have far more housepits and fewer, nearby fire-cracked rock (FCR) features in comparison to the situation in the study area. Furthermore, midden deposits, high quality lithic raw materials, and exotic items are relatively common at well known winter villages (Schalk 1980b) in comparison to the survey area.

a subsitute for excavation. Recovery of buried remains can, and would in the case of the study area, yield specific information necessary to better understand the nature of cultural resources in specific places. In short, enough information has been gathered to demonstrate that the survey area contains potentially important information, but there is still much to learn about the area's extant resources. Some form of additional investigations, including excavation, would be necessary to gain a better understanding of the cultural resources in specific loci and to test the ideas presented in this report.

CHAPTER 6

MANAGEMENT SUMMARY

This chapter is included for management purposes and should be viewed as an executive summary. It is intended to be comprehensible to the well informed layperson. The first section is a synopsis of the kind of work conducted and the important results derived from the investigations. In the second section, the significance of the area's cultural resources in terms of National Register of Historic Places criteria is presented, as are recommendations for the immediate and long term mamagement of cultural resources.

Summary

An intensive, inventory level cultural resources survey was conducted on Corps of Engineers lands along the Columbia River, between river miles 339.9 and 350.8 (as delineated on USGS 7.5 minute quadrangles) in Franklin and Benton counties, Washington. Work was performed by personnel representing the Laboratory of Archaeology and History, Washington State University. The area surveyed includes about 35 km (21.8 mi) of shoreline and eight islands ranging in length from less than 1 km (0.6 mi) to over 4 km (2.5 mi). It encompasses approximately 660 ha (1,643 a). Approximately 150 person days were spent surveying at an average rate of 4.4 ha (11 a) per person-day. Survey work and assessment of the potential significance of the area's cultural resources was conducted at a cost of approximately $78 per hectare or $30 per acre.

The primary purpose of this project was to inventory all readily observable cultural resources and gather the necessary data to assess the resources in terms of their significance and hence potential eligibility for inclusion on the National Register of Historic Places. It is seldom possible to gather the necessary information without conducting test excavations, but in the project area the nature of cultural resources and their depositional context were such that a detailed surface examination provided the necessary information. A nonsite survey was implemented to gather the necessary information, wherein the distribution and densities of individual artifacts and features were monitored in a detailed fashion. This included describing the nature of cultural materials present on horizontal surfaces as well as documenting the nature and depths of materials exposed along hundreds of meters of existing vertical profiles or cutbanks. It was primarily the readily apparent and abundant cultural material exposed in cutbanks that allowed acquisition of a sufficient amount of information without resorting to the more costly and less extensive method of test excavation. This situation, coupled with the fact that reliable information relating to the geomorphological and chronological characteristics of the sediments was available from the literature or

acquired in the field, facilitated assessment of the nature of subsurface cultural deposits. It also should be noted that the nonsite survey technique proved to be a useful way to untangle and update the descriptive results of previous reconnaissance surveys that had resulted in numerous discrepancies concerning site definitions, content and locations.

The field methods and techniques utilized during the course of this project permitted the acquisition, in an effective and efficient manner, of a great deal of new information about the area's cultural resources. This is not to suggest that all or even most of the potentially significant information was recovered. Rather, it is argued that enough data were gathered and analyzed to clearly demonstrate the extraordinary potential significance of the cultural resources in that portion of upper McNary Reservoir. Retrieval of additional and more exhaustive kinds of significant information must await future investigations such as those required in conjunction with construction projects that threaten the integrity of the area's nonrenewable cultural resources.

Distribution of scattered and concentrated cultural materials was almost continuous throughout the project area. Recorded cultural materials included over 50 housepits, 575 definable concentrations of fire-cracked rock (most of which represent various kinds of aboriginal hearths), 1,500 flaked cobbles and thousands of other tools and pieces of debitage or lithic residue. The almost continuous distribution of cultural materials rendered a traditional definition of "site" boundaries, based only on presence or absence of cultural materials, arbitrary or spurious. For example, if sites were defined as areas of the surface that exhibited obvious artifacts and features, the project area could be said to have 10 "sites," one on each of the eight islands and one along each of the two shorelines. Alternatively, if sites had been defined as only those smaller areas with higher densities of artifacts and features, there would probably have been well over 100 "sites," including the 52 that had been recorded during previous reconnaissance level surveys. However, by not considering areas with fewer materials as "sites," potentially significant information could well be lost. These areas would probably be regarded as less important than "sites" and they might not be afforded protection even though they are integral to scientific understanding of this extraordinary data base and the past human behavior it represents. The approach taken in this report has been to view the project area as a series of contiguous "sites" (referred to as type-areas) that were utilized differentially, by past human groups, in terms of intensity and specific activities.

Interpretations of the results of investigations are made in light of the "Sanpoil- Nespelem Model of Plateau Culture" (Ray 1933; Smith 1977). In its most basic form the model indicates that only winter villages (traditionally represented by housepits) and fishing camps (traditionally indicated by the presence of "net weights") would be expected to occur in riverine settings, like that of the project area. Furthermore, the site locational patterns and site contents are predicted to have remained essentially static over the past 3,000 to

4,000 years (Dancy 1973). Some of our more significant observations and findings are listed below:

(1) The kinds of artifacts and features associated with "winter villages" (i.e., locations with housepits) and "fishing camps" (i.e., locations with net weights) fail to exhibit an obvious dichotomy between these kinds of sites.

(2) Based on present information the vast majority of cultural material in the study area probably represents aboriginal occupation during the last 1,500 to 1,000 years. This is primarily because most of the landforms in proximity to the river margins are relatively young. Older cultural deposits may well occur in sediments at greater distances from the river margin and/or buried beneath the younger landforms.

(3) Cultural materials, including but not limited to, pit structures (i.e., probable housepits), mussel shell features, fire-cracked rock features (i.e., various kinds of hearths), cobble tools, bifaces, unifaces, grinding/pounding tools, and chipped stone debitage, are now recorded throughout most of the project area. Excluding the severely disturbed portions of the project area, 82% of the analyzed 100 m survey units exhibit cultural materials.

(4) The 408 relatively undisturbed 100 m survey units are classified into type-areas and several subareas according to the kinds and numbers of artifacts and features. Pit structure type-areas, each containing the remains of 1-9 probable housepits, are the least common. They represent 21 of the 100 m survey units. There are 70 survey units classified as High Density type-areas and distinguished mainly by the presence of 2-34 fire-cracked rock features in close proximity to large numbers of artifacts. Survey units classified as Low Density type-areas are the most common (244) and they are characterized by cultural materials similar to those in High Density type-areas, but in lower frequencies. Only 73 of the 408 analyzed 100 m survey units failed to exhibit readily detectable aboriginal cultural resources.

(5) Pit Structure and High Density survey units are confined primarily to landforms characterized by sandy sediments. Survey units classified as Low Density type-areas occur throughout the project area, but are most common on landforms characterized by gravelly sediments. Sandy sediment landforms tend to offer large, relatively flat and well drained settings that are protected from seasonal floodwaters. These factors would tend to favor occupation of the sandy sediment landforms by relatively large groups of people especially during the rainy season or periods of high runoff. There is also a tendency for High Density type-areas to be in proximity to boulder/cobble fields along the west shore. This may be because the boulder/cobble fields protrude into the river and

create eddies that tend to attract anadromous fish seeking resting places. Thus by situating themselves near to the boulder/cobble fields, the aboriginal groups would also be adjacent to their most important local food resource, namely, anadromous fish. Another factor that may account for the fact that the west shoreline exhibits more cultural material than the east side, could be that the former offers more protection from the prevailing southwest winds. The islands also have very dense concentrations of cultural materials in general, but especially on the higher sandy landforms on the downstream ends. It is suggested that this is because island locations also maximize access to anadromous fish by affording the opportunity to retrieve fish from both the main and minor channels. Furthermore, the higher sandy landforms provide protection from high water levels. Stored food on islands would also be protected from animals that characteristically rob food caches.

(6) Analysis of the data indicate there are both qualitative and quantitative differences in the kinds of basic subsistance activities represented by the artifactual content of different type-areas. Five basic activities--residence/storage, food procurement, food preparation, food processing, and tool manufacturing--are manifested in the study area. Residence/storage activities are indicated only within the Pit Structure type-areas. Artifacts and features indicative of procurement activities (e.g., "net weights," and mussel shell concentrations) are very widespread, but they are most common in units classified as Pit Structure and High Density type-areas. There are also individual survey units in Low Density type-areas that exhibit evidence only for tool manufacturing activities, whereas units typical of High Density type-areas evidence intensive food processing and preparation in addition to tool manufacturing activities. The differences within each of the three broad type-areas are primarily quantitative ones. For example, High Density Area 1 units typically exhibit far more fire-cracked rock features (representing food preparation) than do High Density Area 2 units and food processing is also better represented in the former.

(7) Occupation of the project area by historic period Indians is indicated by the presence of glass beads and copper fragments at several locations along the west shore and on Island E. Some of the small concentration of late nineteenth/early twentieth century tin cans and ceramic fragments together with fire-cracked and grinding/pounding stone tools may be indicative of occupation by Wanapam Indians.

(8) Some of the rock alignments along the west shoreline may also be related to Wanapam Indian occupation. These rock alignments could represent the remains of habitation structures or they may represent some type of fish trap. Alternatively, it is possible that rock alignments are related to nonaboriginal, placer mining activities.

(9) Evidence of extensive gold placer mining is abundant along the northern half of the west shoreline. Placer mining is indicated by the presence of well preserved tailings (i.e., rock piles) in circular, linear, and curvilinear configurations as well as by circular, linear, and curvilinear depressions. A few historic artifacts such as the remains of wooden culverts, hopper-rocker bottoms, and some metal fragments, most likely are related to gold mining. Euro-Americans and Chinese mined the general area during the mid-nineteenth and early twentieth centuries, but the literature review failed to provide specific historical documentation for placer mining within the confines of the project area.

(10) Other historic period (late nineteenth/early twentieth centuries) artifacts and structural remains also are present in the project area, but they are in poor states of preservation. All of the homesteads or ranchsteads on the west shoreline were razed in the 1940s in conjunction with the Hanford Project; these structures are now represented by foundations and debris piles. The poorly preserved remains of an old irrigation pump station and several small irrigation ditches are present along the northern half of the east shoreline.

The extensive aboriginal cultural materials documentd in the project area are interpreted as representing intensive use of the area by groups of people engaged in securing large quantities of anadromous fish. It is suggested that the nature of most of the cultural materials can be explained by aboriginal utilization during the fall seasons for the past 1,500 or 1,000 years. Although other subsistance activities, such as hunting, gathering vegetal resources and shellfish, occurred in conjunction with fishing, most of the activities probably centered around the procurement, processing, and preparation of salmon for purposes of immediate consumption and storage for future use.

Considering that the numerous islands and extensive boulder/cobble fields probably facilitated procurement of fish in a manner similar to areas with rapids, it is reasonable to view the project area as an important fishery. Interestingly, housepit locations in the study area lack certain characteristics of winter villages (e.g., midden deposits, high quality lithic raw materials and exotic items). This fact leads to the suggestion that the groups who routinely utilized the project area may have had their more permanent residences or winter villages elsewhere, perhaps near the mouths of the Yakima and Snake rivers.

Aboriginal utilization of the project area and vicinity continued well into the historic period and probably overlapped considerably with gold mining and ranching during the nineteenth century. More permanent occupation of the project area is evidenced by the presence of the remains of several late nineteenth/early twentieth century homesteads, ranchsteads and irrigation facilities.

Recommendations

As noted, the primary purpose of the survey herein reported is to assess the area's cultural resources according to National Register Criteria. Assessment of significance is judged according to "Criteria for Evaluation." These are presented below.

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:
>
> (1) that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (2) that are associated with the lives of persons significant in our past; or
>
> (3) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (4) that have yielded, or may be likely to yield, information important in prehistory or history (US Department of the Interior 1981:56189).

The nature and distribution of cultural materials in the survey area have been discussed in the preceding chapters. We have demonstrated that archaeological and historical resources are both widespread and abundant. Furthermore, in our opinion, data generated as a result of this nonsite survey provide adequate information to assess the areas' cultural resources according to National Register Criteria. The survey area should be considered as an archaeological district. We argue that, with the exception of the severely disturbed sections (Figure 34), this district (i.e., the survey area) possesses integrity of location, design, setting, materials, workmanship, feeling, and association. Moreover, significance is argued on the basis of criteria (a) and (d). Chapters 4 and 5 of this report provide detailed discussions related to the specific importance of historic and prehistoric resources within the project area which represents one of few remaining free flowing stretches of the Columbia River. Some of these are briefly summarized below:

(1) The mining features along the west shoreline are associated with one or more of the gold placer mining events that have made an important contribution to regional history. It is likely that both Euro-Americans and Chinese mined these areas during the mid-nineteenth and early twentieth

centuries. The extent and integrity of the mining features along this portion of the Columbia River have not been recognized previously. More detailed research involving deed and record searches would lead to more definite conclusions.

(2) The Wanapam Indians utilized the study area during the late nineteenth century. It is likely that some of the historic artifact scatters and possibly some rock alignments are related to Wanapam cultural activities. The rock alignments could represent the remains of residences or they could be related to fishing activities. The potential for future research to yield important information is clearly present.

(3) The survey area is centrally located in the Plateau Culture Area. In this report it has been shown that the survey area exhibits the kinds of aboriginal resources that have yielded, and are likely to yield, even more information important in prehistory and history, specifically:

(a) Surface features are discrete and retain special relationships with other kinds of artifacts and features; behavioral information is readily retrievable.

(b) Buried features, including housepits, are discrete and their material content indicates they are directly related to surface features; behavioral implications are readily retrievable.

(c) Datable archaeological deposits are widespread and abundant. They represent an important resource in that accurate chronological control over the areas' material culture can be obtained.

(d) Strong relationships between landforms and type-areas have been demonstrated. The various landforms were utilized differentially in regard to specific subsistence activities. Areas that provide best access to fish resources have been most intensively utilized. More detailed investigations could address specific questions regarding the underlying implications.

(e) The study area may be a major fishery, important to the groups who occupied the areas in the vicinity of the confluences of the Yakima and Snake rivers with the Columbia. Some evidence has been presented for this contention; additional work could address this point.

Table 26. Cross-reference for previously recorded sites and survey units/type areas.

Previously Recorded Sites	Site Type	Loc/Unit * (Block)	Type-Area **	Previously Recorded Sites	Site Type	Loc/Unit* (Block)	Type-Area**
45BN26	*open camp*	SW243S-SW247S	Disturbed	45BN102	open camp, fishing station	D43-D48	LDS-2
45BN27	open camp	SW204S-SW208S	LDS-3	45BN104	open camp, fishing station housepit	SW148-SW157S	PSA-4;HDA-4
45BN28	open camp	SW156S-SW162S	PSA-4	45BN105	open camp, fishing station housepit	SW137S-SW144S	PSA-4;HDA-4
45BN29	open camp	SW113S-SW127S	LDS-3	45BN106	open camp, fishing station	SW123S-SW136S	LDS-2
45BN30	open camp	SW101S-SW110S	HDA-4	45BN107	open camp	SW25N-SW30N	HDA-4
45BN31	housepit	SW79S-SW84S	PSA-2	45BN108	open camp, housepit	W20-W36	PSA-1,2;HDA-4
45BN32	housepit	SW53S-SW75S	PSA-2,3,4	45BN109	open camp, fishing station	SW53N-SW56N	HDA-4
45BN33	open camp	SW35S-SW45S	LDS-3	45BN110	open camp	W56/60-W64	HDA-4
45BN34	open camp	SW19S-SW33S	HDA-2,4	45BN111	fishing station	SW77N-SW79N	HDA-4
45BN35	open camp	SW8S-SW11S	HDA-4	45BN112	fishing station	SW82N-SW85N	HDA-2,4
45BN36	open camp	SW63N-SW92N	HDA-2,4	45BN162	open camp, fishing station	SW98S-SW119S	HDA-4
45BN37	open camp	SW87N-SW96N	HDA-4	45BN163	open camp, fishing station	SW82S-SW95S	PSA-2;HDA-4
45BN40	open camp	W39-W47	inundated	45BN164	open camp, fishing station	B0-B11	PSA-2,4;HDA-2,4
45BN41	housepit	W9-W40	PSA-1,2,4;HDA-4	45BN165	fishing station	SW513-SW59S	PSA-4;HDA-2
45BN42	open camp	B6-B23	PSA-4;HDA-2,4				
45BN43	open camp	D5-D18	PSA-4;HDA-1,2,3				
45BN44	open camp	D0-D3	LDS-2				
45BN45	housepit	E0-E10	HDA-2,4				
45BN101	open camp, fishing station	D9-D13	HDA-4				
45BN102	open camp, fishing station	D21-D28	PSA-3,4; HDA-1,2,3,4				

Table 26. (Cont.)

Previously Recorded Sites	Site Type	Loc/Unit (Block)	Type Area
45BN166	open camp fishing station	SW31S-SW43/44S	LDS-2
45BN167	open camp fishing station	SW12S-SW18S	HDA-2
45BN168	open camp fishing station housepit	SW3S-SW7S	HDA-4
45BN186	burial	E1-E2	HDA-2
45BN191	open camp	N5-N8	HDA-2,4
45BN192	open camp	D6-D10	HDA-4
45FR19	open camp	SW289S-SE294S	PSA-2
45FR20	open camp	SE93S-SE97S	Disturbed
45FR21	open camp	SW74S-SE78S	LDS-2
45FR22	open camp	SW23S-SE7S	LDS-3
45FR23	open camp	SW12N-SE18N	LDS-1
45FR24	open camp	SE31N-SE36N	HDA-4
45FR25	open camp	SE57N-SE61N	LDS-1
45FR27	open camp	T-94-95	Inundated
45FR251	open camp fishing station	SE5N-SE8N	LDS-1
45FR252	open camp	SE20/23N-SE29N	HDA-4
45FR253	open camp fishing station	SE60N-SE70N	LDS-2
45FR308	housepit	CO-C20	HDA-4

*Key for Location/Unit (Block) abbreviations:

SW31S: West side shore, unit 31 south
SW63N: West side shore, unit 63 north
W39: Wooded Island, unit 39
B6: Island B, unit 6
D5: Island D, unit 5
E0: Island E, unit 0
SE93S: East side shore, unit 93 south
SE12N: East side shore, unit 12 north
CO: Island C, unit 0

**Key for Type-Area abbreviations:

LDS-3: Low Density Sub-Area 3
PSA-4: Pit Structure Area 4
HDA-4: High Density Area 4

(4) The distribution of the cultural resources is almost continuous in the area. Different portions of the area exhibit different manifestations of cultural material. It is the survey area as a whole that best represents the observed variation.

The survey area, including portions of the Wooded Island National Register District, encompasses 52 previously recorded sites (Figure 12). Table 26 provides a cross reference for previously recorded sites and our type-areas. Site type designations follow those used by Rice and Chavez (1980) and Galm et al. (1981). Table 26 should be used to understand the spatial relationship between previously recorded sites and survey units representing our type-areas. Locational information from the survey units or blocks and type-areas can be obtained from Figure 34.

Our assessment of the study area's cultural resources leads us to recommend that it be considered for inclusion on the National Register as a district. This could be accomplished best by expanding the existing Wooded Island District to include those portions of the survey area that have been designated as undisturbed (see Figure 34). There are, however, two survey units--SE277S and SE278S--that are classified as disturbed because they are covered with rip-rap. Both of these units contain cultural materials that are protected from erosion by rip-rap and as such they should be considered as part of the district. We encourage those individuals who represent the appropriate district(s) of the Corps of Engineers and who are charged with managing the area's cultural resources, to request a determination of eligibility from the State Historic Preservation Office.

Three processes or agents are currently contributing to the destruction of nonrenewable cultural resources in the study area. These are: (1) activities of relic collectors; (2) small scale construction projects; and (3) erosion, primarily as a result of seasonal high water levels. We recommend that existing laws, rules and regulations be enforced as measures to protect and preserve the cultural resources from destruction at the hands of relic collectors and as a result of small scale construction projects. Hanford Security personnel routinely patrol much of the west shoreline where relic collectors have been active. If they were informed of the nature of these activities, we expect enforcement of existing laws would be facilitated. We assume that small scale construction projects on federal property, such as those for pump stations and access roads, require permits from the appropriate agency. It is recommended that these permits be granted only if the rules and regulations governing cultural resources are followed.

Construction of the series of dams along the Columbia River has effectively prevented large scale flooding. Erosion resulting from normal seasonal high water levels continues to impact cultural resources along the river margin. The effects are more destructive to cultural resources in and on the sandy sediments that comprise the high flats or

terraces along the shoreline and the sandy alluvial flats of the islands, than they are to those in and on gravelly sediments. When free water or an associated capillary fringe comes into contact with sandy sediments the effects are devastating to encased archaeological resources. These effects are widespread in general, but some areas are more susceptible than others. Unless the hydrological regime of the Columbia River changes, most of the area's cultural resources are preserved and protected in an effective and efficient manner by leaving them in their natural state. We documented three specific places in the study area where seasonal high water levels were destroying intact archaeological deposits much more rapidly than elsewhere. These merit immediate protective measures. We suggest that they be protected by rip-rap, a proven effective means to retard bank erosion. This form of mitigation is in our opinion preferable over excavation. The location of these specific areas can be seen in Figure 34; they are: (1) along the west shore in survey units SW90-S, SW91-S, and SW92-S; (2) on Wooded Island in survey units IW60, IW61, IW62, and IW63; and (3) at the southern end of east shore in units SE278-S, SE279-S, SE280-S, and for an unknown distance to the south (i.e., beyond the survey area).

It is the specific nature of the cultural deposits and their high potential to yield significant information that leads us to recommend bank stabilization for the three areas referred to in the preceding paragraph. In all three cases the general stratigraphy is readily apparent and datable materials are present in cutbank profiles. The west shoreline area is particularly important because the cultural materials are buried more deeply (ca. 1.8 m or 5.9 ft) than elsewhere. Cultural deposits (e.g., bone and shell fragments as well as fire-cracked rock and charcoal) appear to be stratified and as such the area has the potential to yield important information regarding changes through time. The area on Wooded Island exhibits a well preserved, very distinct, organic and artifact rich stratum buried 20-50 cm beneath the surface. This stratum not only contains fragments of shell, fire-cracked rock, charcoal, and crytocrystalline flakes, but also obvious hearth features, at least one of which lacks fire-cracked rock. These cultural deposits appear to represent a living surface that affords the opportunity to examine cultural materials and behavioral implications representative of a specific time period. Probable housepits, as well as shell and bone concentrations and a variety of artifacts including cobble tools and a "net weight," are exposed in the cutbank along the east shoreline area recommended for bank stabilization. The area exhibits one of the few observed straight-walled pit features and a higher density of bone fragments than elsewhere. In short, this area's potential to yield significant information regarding architectural features, subsistence items, and artifact assemblages is unusually high. We should also note that a portion of the bank in that area has been stabilized by covering it with gravels extracted from a nearby barrow pit. According to the landowner, bank stabilization work was carried out several years ago by the Corps of Engineers in an effort to reduce erosion. Not only did it appear to us that erosion had been retarded, but also that the cultural resources had been protected effectively.

There is another location in the survey area that contains buried cultural resources that are currently being eroded as a result of road construction. The road that has damaged the cultural deposits parallels the river south of and adjacent to White Bluffs. Apparently this road is maintained by a Franklin County agency. We recommend that the impacted cultural deposits also be covered with rip-rap. The location is east of Island B along the shoreline in survey units SE83-S and SE80/82-S. This area is particularly important. It is the only place in the survey area where cultural materials are buried under colluvium. The materials include flaked lithic debitage, fire-cracked rock and bone and shell fragments. In addition, deposits of primary Mazama ash have been found in the immediate vicinity. While the precise relationships between the ash and cultural deposits are not known, the well dated (ca. 6700 B.P.) ash deposits could be important in assessing the age of the cultural deposits.

It has been argued herein that the undisturbed portion of the project area should be considered as potentially eligible for inclusion as a district on the National Register of Historic Places. The argument rests on the following positions: (1) that the area has yielded, and (2) is likely to yield important information. This means that a great deal of important information remains to be recovered from the cultural resources in the field. Prior to undertaking any kind of activity that alters the landscape and/or could disturb potentially significant cultural resources, measures should be taken to assess the specific impacts and implement the required mitigative actions. Such assessments and mitigative actions, be they determinations of no adverse impact, project redesign or relocation, or data recovery, should be made in accordance with existing laws, rules, and regulations and be conducted by professional archaeologists in consultation with personnel representing the appropriate local, state, and federal agencies.

The significance of the study area concerns, in part, its relationship to cultural resources in adjacent and surrounding areas. We have discussed some of these relationships, such as those with the cultural resources in areas with rapids and the resources near the confluence of the Snake and Columbia rivers, but very little is known about the nature of cultural materials recovered from nearby areas within the limits of McNary Reservoir. For example, archaeological sites and complexes at Columbia Point, Bateman Island, and Chiawana Park have been partially excavated chiefly by members of the Mid-Columbia Archaeological Society, but little has been accomplished in the way of analysis. Considering this, it is also recommended that the Walla Walla Corps of Engineers fund a pilot study to analyze the recovered materials (e.g., tools, debitage, floral, and faunal items) from those sites. Such a study would provide much needed data, not only to better understand the nature of the remains themselves, but also to facilitate comprehension of the relationships among the cultural resources throughout the area, including those discussed in this report. Until there is good understanding of these relationships and the kinds of previously collected archaeological data that pertains to them, surviving cultural resources can not be managed or conserved in an informed manner as might be desired.

In the preceeding paragraphs we have discussed a series of management recommendations for the cultural resources in a portion of Upper McNary Reservoir. These recommendations are summarized below:

(1) It is recommended that cultural resources between river miles 339.3 and 350.8 (excepting the survey units classed as severly disturbed) are eligible for inclusion as a district on the National Register of Historic Places.

(2) Corps of Engineers personnel are encouraged to coordinate efforts to protect the area's cultural resources, from the hands of relic collectors, with other agencies (e.g., Department of Energy and Fish and Wildlife Service) having jurisdiction over portions of the survey area.

(3) It is recommended that permits from the appropriate agencies for construction or other land altering projects on these federal lands be granted only if the laws, rules, and regulations regarding cultural resources management are followed.

(4) Unless the hydrological regime of this portion of the Columbia River is changed, most of the area's cultural resources are preserved and protected in an effective and efficient manner by leaving them in their natural state. If, however, the pool level is raised or discharge rates from upstream dams are increased, extensive bank erosion would probably result. In those cases large scale bank stabilization and/or data recovery would probably be necessary to mitigate adverse impacts to the cultural resources.

(5) In three specific locations seasonal high water levels are destroying intact archaeological deposits much faster than elsewhere. It is recommended that these areas be protected by rip-rap or some other means of bank stabilization. The areas are as follows: (a) survey units SW90-S, SW91-S, and SW92-S on the west shore; (b) survey units IW60, IW61, IW62, and IW63 on Wooded Island; and (c) survey units SE278-S, SE279-S, SE280-S, and for an undetermined distance south. Road construction has damaged cultural deposits and increased rates of erosion for cultural deposits along the east shoreline in survey units SE83-2 and SE80/82-S. That area also is recommended for protection by a rip-rap covering. If for some reason bank stabilization is not an acceptable means of preserving the resources then data recovery is recommended.

(6) It is recommended that a pilot study be funded to analyze the materials recovered from downstream McNary Reservoir sites (Columbia Point, Bateman Island, and Chiawana Park) by the Mid-Columbia Archaeological Society. Such an

effort would facilitate comparisons with materials from the surveyed area and aid in determining any differences between cultural resources in these two areas.

(7) In the future, efforts should be made to coordinate cultural resources investigations with representatives of Native American tribes who once inhabited the project area.

(8) It is recommended that the information and ideas presented in this report as well as those presented by Rice and Chavez (1980) be used to direct the course of future cultural resources investigations in the area. Examples of problems that might be addressed include the following:

(a) Extensive remains of placer mining activities are present in the area, yet little evidence for habitation structures or debris was found. Where and how did the Chinese and Euro-American miners live?

(b) Many rock alignments have been identified but their precise function remains unclear. Are these features related to aboriginal or nonaboriginal activities and what is their function(s)?

(c) The types of analysis conducted failed to detect differences between presumed prehistoric and historic (e.g., Wanapam) lithic artifact assemblages, yet some differences would be expected. What, if any, differences are there between very late prehistoric and historic artifact assemblages; how can any differences or similarities be explained?

(d) It is clear that both prehistoric and historic aboriginal groups occupied the area. Are there significant differences in the land use patterns and, if so, how can they be explained?

(e) Differences between classic "winter villages" and housepit locations in the project area have been noted. Can these differences be substantiated with more detailed information and how would they effect current interpretations of the "Sanpoil-Nespelem Model of Plateau Culture"?

(f) Some of the housepits identified in the project area are shallow and saucer shaped, others are deep and straight-walled. Can the differences

be explained using seasonal, functional, and/or chronological arguments?

(g) There is considerable variation in the kinds of fire-cracked rock features recorded in the project area. What are the best explanations for these differences?

(h) Most of the cultural remains recorded in the study area appear to have been deposited during the last 1,500 years. Can this contention be supported by absolute dating of the archaeological deposits?

(i) It has been suggested that older cultural materials could be present beneath the younger landforms, and at a greater distance from the river margin, as well as buried in fan deposits. This suggestion should be explored and efforts shoud be made to establish a local chronology and relate it to regional chronologies.

We take this opportunity to emphasize that the information contained in this report can be used to address specific management concerns. The information provided accurately represents the nature and distribution of cultural materials and topograpically depicts the landscape within the project area on sketch maps that are based on contour maps made for McNary Reservoir by the Corps. It is anticipated that a number of management decisions will have to be made in the near future due to the survey area's proximity to a rapidly expanding urban area. As necessary, the Corps' land managers in conjunction with the Corps' archaeologists should be able to use the data presented herein--artifact and feature types, as well as that related to landforms and sediments--to prepare project specific scopes-of-work designed to protect and/or recover additional information related to surface and subsurface cultural resources in areas they plan to develop. To this end, we present a set of instructions as to how to use the information provided. Our example deals with assessing the probable impacts of and mitigative actions for a small scale construction project where relocation is not a viable alternative. Suggested steps are listed below:

(1) Locate the general project site on USGS 7.5 minute topographic maps and/or Corps blue-line maps of McNary Reservoir.

(2) Key the general location of the project site to a specific location on the topographic sketch maps (Figure 34), using major roads, landforms, permanent USGS or Corps vertical/horizontal control points, etc. as reference points.

(3) Consult Appendix B for a listing of the specific kinds of cultural materials and landforms within each effected 50 m survey unit.

(4) Consult Appendix C for a listing of the kinds of cultural materials and landforms according to the type-area conceptual framework. Type-areas also can be determined by referring to the topographic sketch maps (Figure 34).

(5) If the project site is classified as disturbed, contruction activities should be able to proceed because disturbed areas (except for survey units SE277-S and SE278-S) are excluded from the National Register district recommendation.

(6) If the project site area is classified as Low Density Subarea 3.2 or 3.3, it is likely that an argument for "no adverse effect" could be made as part of a Section 106 review in accordance with the National Historic Preservation Act.

(7) It is suggested that a Corps archeologist(s) conduct an on-site inspection if the project site area is classified as any of the Pit Structure or High Density type-areas or Low Density Subareas 1, 2, or 3.1. This is because some form of data recovery may be necessary to receive a determination of "no adverse effect" as part of the Section 106 review. Locations of survey units should be verified by finding one of the semipermanent grid control points. Depending upon the specific nature of cultural deposits, substantial subsurface excavation could be appropriate for cultural materials on or in sandy sediments. Alternatively, in most areas characterized by gravelly sediments, surface mapping/collecting coupled with exploratory excavation could be appropriate. However, some of the cultural deposits along the east shoreline are buried in fan deposits (with gravelly sediments) and excavation would be appropriate in those areas.

To summarize, the data presented in this report are intended to provide the basic information required for Corps of Engineers' personnel to make well-informed management decisions. Not only can this document be used as a planning tool for management purposes, but it can also serve as a guide to future archaeological investigations in the area. Thus, sound management decisions can be made in the light of explicit research goals.

REFERENCES CITED

Allen, Richard L.
1977 Status of the upper Columbia River salmon and steelhead runs. In Columbia River Salmon and Steelhead. American Fisheries Society, Special Publication No. 10. pp.23-30.

Bartholomew, Michael J.
1982 Pollen and sediment analyses of Clear Lake, Whitman County, Washington: The last 600 years. Unpublished M.A. thesis, Department of Anthropology, Washington State University.

Bense, Judith A.
1972 The Cascade Phase: A study in the effect of the Altithermal on cultural system. Unpublished Ph.D dissertation, Department of Anthropology, Washington State University.

Blalock, Hubert M. Jr.
1979 Social Statistics. McGraw-Hill Book Company, New York.

Brauner, David R.
1976 Alpowai: The culture history of the Alpowa Locality (Vol. I-II). Unpublished Ph.D. dissertation, Department of Anthropology, Washington State University.

Browman, David L., and David A. Munsell
1969 Columbia Plateau prehistory: Cultural development and impinging influences. American Antiquity 34:249-264.

Butler, B. Robert
1961 The Old Cordilleran Culture in the Pacific Northwest. Occasional Papers of the Idaho State College Museum 5.

Chittenden, H. M.
1912 U. S. Army Corps of Engineers' 1908 revisions to T. W. Symons' 1882 maps of the Columbia River. Copies of large format maps on file at the Washington Archaeological Research Center, Pullman, Washington.

Christenson, Andrew L., and Dwight W. Read
1977 Numerical taxonomy, R-mode factor analysis, and archaeological classification. American Antiquity 42(2):163-179.

Cleveland, Gregory C.
1976 Some notes on antelope procurement. In Preliminary Archaeological Investigations at the Miller Site, Strawberry Island, 1976. A late prehistoric village near Burbank, Franklin County, Washington. Washington Archaeological Research Center, Project Reports 46.

AD-A127 026 ARCHAEOLOGICAL INVESTIGATIONS IN UPPER MCNARY RESERVOIR: 1981-1982(U) WASHINGTON STATE UNIV PULLMAN LAB OF ARCHAEOLOGY AND HISTORY A V THOMS ET AL. 1983 3/

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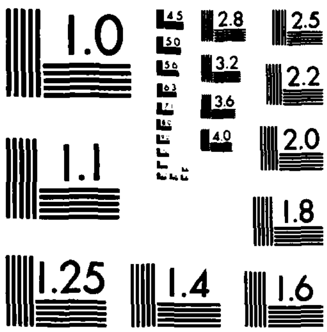
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Cleveland, Gregory C., Bruce Cochran, Judith Giniger, and Hallett Hammett
1976 Archaeological reconnaissance on the mid-Columbia and lower Snake River reservoirs for the Walla Walla District Army Corps of Engineers. Washington Archaeological Research Center, Washington State University, Project Reports 27.

Collins, Michael B.
1975 Sources of bias in processual data: An appraisal. In Sampling in Archaeology, edited by James W. Mueller, pp. 26-32. University of Arizona Press, Tucson.

Cowles, Ernie
1959 Hunting artifacts. Screenings, the Oregon Archaeological Society 8(6):1-2.

Dancey, William Sherwood
1973 Prehistoric land use and settlement patterns in the Priest Rapids area, Washington. Ph.D. dissertation, University of Washington. Seattle, Washington.

1974 The archeological survey: A reorientation. Man in the Northeast 8:98-112.

1976 Riverine period settlement and land use pattern in the Priest Rapids Area, central Washington. Northwest Anthropological Research Notes 10(2):147-160.

Daugherty, Richard D.
1962 The intermontane western tradition. American Antiquity 28: 144-150.

Doran, J.E., and F.R. Hodson
1975 Mathematics and computers in archaeology. Harvard University Press, Cambridge.

Drucker, Philip
1947 Preliminary statement on the archaeological remains in the McNary Reservoir Columbia River, Oregon-Washington. Ms. on file, Columbia Basin Project, River Basin Surveys, Smithsonian Institution, Washington, D.C.

1948 Appraisal of the archaeological resources of the McNary reservoir, Oregon-Washington. Ms. on file, Columbia Basin Project, River Basin Surveys, Smithsonian Institution, Washington, D.C.

Drury, Clifford
1958 The diaries and letters of Henry H. Spaulding and Asa Bowen Smith relating to the Nez Perce Mission 1838-1942. Arthur H. Clark, Glendale.

Engelman, Lazzio, and John A. Hartigan
1981 K-means clustering. In BMDP statistical software, 1981, edited by W. J. Dixon et al., pp. 464-473. University of California Press, Berkeley.

Esvelt, John P.
1959 Upper Columbia Chinese placering. Pacific Northwesterner, 3(1):6-119.No. 1.

Folk, Robert
1974 Petrology of sedimentary rocks. Hemphill Publishing Co., Austin, Texas.

Ford, J.A.
1954 On the concept of types, the type concept revisited. American Anthropologist 56:42-54.

Franklin, Jerry F., and C. T. Dyrness
1973 Natural vegetation of Oregon and Washington. U.S. Forest Service, General Technical Reports PNW-8.

Fuller, George W.
1928 The Inland Empire or the Pacific Northwest: A history (Vols I-III). H.G. Linderman, Spokane.

Fulton, Leonard A.
1968 Spawning areas and abundance of chinook salmon (Oreorhynchus tshawytscha) in the Columbia River Basin--past and present. U.S. Fish and Wildlife Service, Special Scientific Report, Fisheries No. 571.

1970 Spawning areas and abundance of steelhead trout and coho, sockeye, and chum salmon in the Columbia River Basin--past and present. U.S. Fish and Wildlife Service, Special Scientific Report, Fisheries No. 618

Galm, Jerry R., and Peggy Benson
1980 Proposed North Richland bridge to Washington. Letter on File, Washington State Department of Transportation, Olympia.

Galm, Jerry R., Glenn P. Hartmann, Ruth A. Masten, and Garry O. Stephenson
1981 A cultural resources overview of Bonneville Power Administration's Mid-Columbia Project, Central Washington. Eastern Washington University Reports in Archaeology and History, Bonneville Cultural Resources Groups Report No. 100-116. Cheney, Washington.

Glover, Richard (editor)
1962 David Thompson's Narrative 1784-1812. Champlain Society, Toronto.

Green, Dee F.
1975 Cluster analysis of Silumiut houses. Arctic Anthropology 13(1): 82-89.

Gvie, H. Dean
1977 Bugles in the valley: The story of Garnett's Fort Simcoe (2nd. ed.). Oregon Historical Society, Portland.

Harkins, Kent
1978 The prehistoric occurrence and aboriginal utilization of bison in the Central Columbia Basin. Unpublished M.A. thesis, Washington State University, Pullman.

Hodson, F.R.
1969 Searching for structure within multilariate archaeological data. World Archaeology 1:90-105.

Huntington, Marshall T.
1956 Inventory of Washington minerals. Part II: Metallic minerals. State of Washington, Division of Mines and Geology. Bulletin No. 37.

Jackson, William T.
1959 Wagon roads west. University of California Press, Berkely.

Johansen, Dorthy O., and Charles M. Gates
1967 Empire of the Columbia: A history of the Pacific Northwest. Harper & Row, New York.

Krieger, Herbert W.
1928 Prehistoric inhabitants of the Columbia River Valley. Smithsonian Institution, Explorations and Field Work 1927, pp. 133-140.

Laboratory of Archaeology and History
n.d.a Proposal for an archaeological survey of the upper McNary Reservoir. Ms. on file, Laboratory of Archaeology and History, Washington State University, Pullman.

n.d.b Proposal for phase II of the archaeological survey of upper McNary Reservoir. Ms. on file, Laboratory of Archaeology and History, Washington State University, Pullman.

Leonhardy, Frank, and David G. Rice
1970 A proposed culture typology for the lower Snake River region, southwestern Washinton. Northwest Anthropological Research Notes 4(1):1-29.

Lyman, William Denison
1919 History of Yakima Valley, Washington, comprising Yakima, Kittitas, and Benton Counties. S. J. Clarlle, Chicago.

Meinig, D. W.
1968 The Great Columbia Plain: A historical geography 1805-1910. University of Washington Press, Seattle.

Merrill, Charles W., Charles W. Henderson and O. E. Kiessling
1937 Small-scale placer mines as a source of gold, employment, and livelihood in 1935. Work Progress Administration, Washington, D.C.

Mierendorf, Robert R.
1981 Geologic and Cultural Interpretation of Stratigraphy at the Miller Site, 45FR5, Franklin County, Washington. Miller Site, 45FR5, Franklin County, Washington. Unpublished M.A. Thesis, Department of Anthropology, Washington State University.

Muto, Guy R.
1976 The Cascade tradition: An examination of a Levallois-like reduction system in early Snake River prehistory. Unpublished Ph.D. dissertation, Department of Anthropology, Washington State University.

Nelson, Charles M.
1969 The Sunset Creek Site (45KT28) and its place in Plateau prehistory. Laboratory of Anthropology, Washington State University, Reports of Investigations 47.

Osborne, Douglas
1953 Archaeological occurrences of Pronghorn Antelope, Bison, and Horse in the Columbia Plateau. Scientific Monthly 77(5):260-269.

1957 Excavations in the McNary Reservoir basin near Umatilla, Oregon. Bureau of American Ethnology Bulletin 166, River Basin Surveys Paper 8:1-258.

Osborne, Douglas, and Robert H. Crabtree
1961 Two sites in the upper McNary Reservoir. Tebiwa 4(2):19-36.

Pacific Northwest River Basins Commission
1971 Fish and Wildlife. Appendix XIV. Vancouver, Washington.

Parker, Martha Berry
1979 Tales of Richland, White Bluffs and Hanford 1805-1943: Before the Atomic Reserve. Ye Galleon Press, Fairfield, Washington.

Ray, Verne R.
1933 The Sanpoil and Nespelem: Salishan Peoples of Northeastern Washington. University of Washington Press, Seattle. Reprinted 1954 by the Human Area Relations Files, New Haven.

Rice, David G.
1967 A commentary on the derivation of Plateau culture. Ms. on file, Washington Archaeological Research Center, Washington State University.

1968a Archaeological reconnaissance, Ben Franklin Reservoir area, 1968. Ms. on file, Laboratory of Anthropology, Washington State University, Pullman.

1968b Archaeological reconnaissance, Hanford Atomic Works. Ms. on file, U.S. Atomic Energy Commission, Richland, Washington.

1972 The Windust phase in lower Snake River region prehistory. Laboratory of Anthropology, Washington State University, Report of Investigations 50.

Rice, David G., and Marc Chavez
1980 Cultural resources assessment of the Hanford Reach of the Columbia River, state of Washington. Ms. on file, U.S. Army Corps of Engineers, Seattle District.

Sanger, David
1967 Prehistory of the Pacific Northwest as seen from the interior of British Columbia. American Antiquity 32:186-197.

Schalk, Randall
1978 Some observations on migratory fish in the Plateau. In Second Annual Interim Report on the Archaeological Investigations at the Miller Site (45FR5) on Strawberry Island, A Late Prehistoric Village Near Burbank, Washington. The Washington Archaeological Reseach Center, Project Report Number 72.

1980a The Deschutes-Umatilla Plateau Environment. In Cultural Resource Investigations for the Second Powerhouse Project at McNary Dam, Near Umatilla, Oregon, R.F. Schalk (assembler). Laboratory of Archaeology and History, Project Report Number 1. Washington State University, Pullman.

1980b The Cultural Sequence of the Southern Columbia Plateau. In Cultural Resource Investigations for the Second Powerhouse Project at McNary Dam, Near Umatilla, Oregon, R.F. Schalk (assembler), Laboratory of Archaeology and History, Project Report Number 1, Washington Stae University, Pullman.

1982 The Regional Environment. Chapter 2 in "An Archaeological Survey of the Priest Rapids Reservoir: 1981" R.F. Schalk (editor), Laboratory of Archaeology and History, Project Report Number 12.

Schalk, Randall F., and Robert R. Mierendorf
n.d. Environmental Setting. Chapter 2 in Cultural Resources of the Rocky Reach of the Columbia, R.F. Schalk (editor), manuscript on file at the Laboratory of Archaeology and History, Washington State University, Pullman.

Schiffer, Micheal B., Alan P. Sullivan, and Timothy C. Klinger
1978 The design of archaeological surveys. World Archaeology 10(1):1-28.

Shiner, Joel L.
1961 The McNary Reservoir: A study in Plateau archaeology. Bureau of American Ethnology, Bulletin 179, River Basin Surveys 23:149-266. Washington, D.C.

Smith, Allan H.
1982 Ethnohistory and ethnography of the Priest Rapids Reservoir. In An Archaeological Survey of the Priest Rapids Reservoir: 1981, edited by Randall F. Schalk, pp. 38-63. Laboratory of Archaeology and History, Washington State University, Project Reports 12.

Smith, William C.
1977 Archaeological explorations in the Columbia Basin: A report on the Mesa Project, 1973-1975. Ms. on file, Central Washington Archaeological Survey, Department of Anthropology, Central Washington University.

Splawn, Andrew Jackson
1917 Ka-mi-akin: Last hero of the Yakimas. Kilham Stationary and Printing Company, Portland, Oregon.

Statham, Dawn S.
1975 A biogeographic model of camas and its role in the aboriginal economy of the Northern Shashoni in Idaho. Tebiwa 18(1):59-80.

Swanson, Earl H., Jr.
1962 The emergence of Plateau culture. Occasional Papers of the Idaho State College Museum 8.

Symons, Thomas W.
1882 Report of an examination of the upper Columbia River and the territory in its vicinity in September and October, 1881, to determine its navigability and adaptability to steamboat transportation. Senate Executive Document 186, 47th Congress, 1st Session, Washington, D.C.

Thomas, David H.
1976 Figuring anthropology, first principles of probability and statistics. Holt, Rinehart and Winston, New York.

1979 Nonsite sampling in archaeology up the creek without a site. In Sampling in Archaeology, edited by James W. Mueller, pp. 61-81. University of Arizona Press, Tucson.

Thompson, Margaret
1952 Benton Co. Washington. Prosser, Washington.

Thoms, Alston, and Karen Dohm
1982 Interim report: Phase I, a cultural resources survey of the Upper McNary Reservoir, Franklin and Benton Counties, Washington. Ms. on file, U.S. Army Corps of Engineers, Walla Walla.

Thwaites, Rueben Gold (editor)
1959 Original journal of the Lewis and Clark Expedition 1804-1806. Antiquarian Press, New York.

Travis, Helga Anderson
1976 Tumbleweed trails. Prosser Record Bulletin, Prosser, Washington.

United States Army Corps of Engineers
1976 McNary final environmental impact statement. Copy on file at Corps of Engineers, Walla Walla District. Walla Walla, Washington.

1981 Contract for services in the Upper McNary Reservoir between Washington State University and the Department of the Army. Copy on file, United States Army Corps of Engineeps, Walla Walla District.

United States Department of Interior
1981 National Park Service 36 CFR Port 60, National Register of Historic Places. Federal Register 46(220):56183-56195.

Van Arsdol, Ted
1972 Desert boom and bust: The story of irrigation efforts and townbuilding in Benton County, Washington 1888-1904. Vancouver, Washington.

Washington State, Department of Natural Resources
1971 Placer gold mining in Washington. Ms. on file, State of Washington, Department of Natural Resources, Division of Mines and Geology. Olympia, Washington.

Wynne, Robert E.
1964 Reaction to the Chinese in the Pacific Northwest and British Columbia, 1850-1910. Ph.D. dissertation, University of Washington. University Microfilms, Ann Arbor, Michigan

APPENDIX A

Proposal (Appendix A of Contract) and Other

Related Contract and Review Documents.

WASHINGTON STATE UNIVERSITY

RESEARCH PROPOSAL

TO: U.S. Army Corps of Engineers, Walla Walla District

TITLE OF PROJECT: An Archaeological Survey of the Upper McNary Reservoir

PRINCIPAL INVESTIGATOR: Randall F. Schalk
Research Associate
Laboratory of Archaeology and History

AMOUNT REQUESTED: $23,421.00

FUNDING PERIOD: Est. June 20, 1981 through May 1, 1982

SIGNATURES:

____
Randall F. Schalk

____
R. D. Daugherty, Director

____
T. L. Kennedy, Dean
Humanities and Social Sciences

____
C. J. Nyman, Dean
Graduate School

AN ARCHAEOLOGICAL SURVEY OF THE UPPER McNARY RESERVOIR

Research Proposal

I. INTRODUCTION

This proposal describes an archaeological survey that would be performed along a 10-mile stretch of the Columbia River on lands managed by the Walla Walla District, Army Corps of Engineers. This segment of the Columbia lies at the very upstream end of the McNary Reservoir and its upper limit is defined by the lower end of a free-flowing stretch of river known as the "Hanford Reach." It extends between river miles 340 and 350. The purpose of the survey would be to inventory cultural resources and recover information that will be necessary for assessing their National Register Eligibility. Although portions of this area have been previously reconnoitered, there is insufficient data available for making eligibility determinations for the National Register. The following sections of this proposal outline research design, field methods, and budgetary considerations for the proposed survey.

II. RESEARCH OBJECTIVES

One of the principal kinds of data recovered during archaeological survey is locational information on site type and topographic setting. It is proposed here that data collected during this survey be employed in a test of two prevailing ideas about late prehistoric land-use in the archaeological literature of this region.

The first idea is that there were basically four phases to the annual settlement cycle--each associated with different subsistence activities and each located in a different topographic setting. This view of Plateau land-use which was originally formulated by Verne Ray for the Sanpoil-Nespelem and subsequently employed by numerous archaeologists, has been referred to as the "Sanpoil-Nespelem Model of Plateau Culture" (Smith 1977:10). According to this model, the annual settlement cycle involved: (1) macroband occupation of villages located along the major trunk streams during the winter, (2) microband camps located in root-collecting areas away from the river in the spring, (3) microband fishing camps located along the rivers during the summer, and (4) microband hunting camps located in upland areas during the fall. According to this model, there would only be two types of sites located in those areas commonly dealt with in reservoir surveys: winter villages and fishing camps.

The second idea to be examined as a part of the research design of this project has to do with the temporal distribution of the above-described settlement system. Several archaeologists have argued that the late prehistoric adaptations to this portion of the Columbia Basin were essentially unchanging for the past 3000 to 4000 years. In other words, the Sanpoil-Nespelem Model of Plateau land use has been viewed as capable of accommodating all archaeological patterning for at least the past three millenia. Our own archaeological investigations in the Lower Snake area during recent years have increasingly indicated a lack cf agreement between both of these ideas and archaeological patterning. It will be the major research objective of this project to collect information that would permit a test of these ideas on survey data.

A number of test implications can be generated from these models about late prehistoric land-use and a few of these might be mentioned. There

would be, according to these notions, two functionally distinct kinds of late prehistoric sites along the major river--winter villages and fishing camps. Although archaeologists have rarely, if ever, identified what differences there might be in the artifact assemblages of these two types of sites, differences should be marked. Winter village sites should be characterized by greater artifactual and debris diversity than summer fishing camps. This diversity would be the expectable result of greater duration of occupation and the variety of maintenance activities that would necessarily take place during the winter.

Faunal assemblages should reflect the primary reliance upon stored foods supplemented by winter hunting of large ungulates (deer, elk, antelope, bison). Summer fishing camps, on the other hand, should exhibit less diversity in artifacts and debris. Tools believed to be associated with plant processing and fishing should occur in higher frequencies in such sites. Faunal assemblages should contain higher frequencies of small mammals and fish than the winter villages. To the extent that structural remains can be identified from surficial evidence, it is expected that they should be common on winter village sites and infrequent in summer fishing camps.

An implication of the viewpoint that Plateau land-use has been essentially static over the past 3000-4000 years in that there should be no evidence for changes in site locational patterns or site content through time. Because this interval can be partitioned temporally on the basis of projectile points and certain other artifacts, it should be possible to stratify the inventory of sites from the survey by age. This will then permit a systematic examination of whether or not there have been changes in settlement systems as reflected in riverine sites.

III. METHODOLOGY

As background to the project and preceding the fieldwork phase, a literature search and review would be undertaken for the region that includes the project area. This review would establish the archaeological and historical context for evaluating the significance of those cultural resources that would be identified during the in-field survey of the project area.

Survey procedures would involve a 3-person crew walking 30 meter parallel transects over those areas included within the Corps of Engineers holding along this stretch of the Middle Columbia. All historic and prehistoric cultural remains located would be marked on both aerial photographs and topographic maps provided by the Corps of Engineers. Standardized WSU archaeological site forms would be filled out for each site and sketch maps of features and debris concentrations would be drawn. Various classes of debris (fire-cracked rock, chipping debris, animal bone) would be either counted in the case of small sites or estimated in the case of very large sites. Because some areas within the project area have been afforded an unusual degree of protection from relic collectors as a part of the Hanford Reservation since World War II, it is likely that archaeological sites in these areas may contain exceptionally good conditions of preservation and surface exposure of artifacts. Also, it is possible that this stretch of the Columbia at the very upper end of McNary Reservoir and the lower end of the free-flowing Hanford Reach, has been exposed to a considerable degree of erosion. These factors combined may well result in numerous sites with high density surface exposures. To obtain the most information on artifacts and debris from such sites economically, it is suggested that lithic debris and stone tools be described on the sites by survey crew members using forms for each that are presently being prepared at the Laboratory of Archaeology and

History. By recording the variability in lithic debris and artifacts while on the sites, it should be possible to evaluate some of the ideas mentioned in the preceding Research Objectives section without the additional expenses of laboratory processing and curation.

Also, this procedure will insure a minimum of impact to the sites during the survey so that systematic surface collecting efforts might be carried out subsequently. It is presently planned that a second season of work involving surface collecting and site testing would be done next year and this season's survey and background effort should permit formulation of a design for such work.

IV. TENTATIVE PROJECT SCHEDULE

June 20, 1981 - July 20, 1981	Literature Review and Background Research
July 20, 1981 - Aug. 15, 1981	Intensive Field Survey
Aug. 16, 1981 - May 1, 1982	Analysis and Report Preparation

The survey report would be submitted by May 1, 1982.

WASHINGTON STATE UNIVERSITY

PULLMAN, WASHINGTON 99164

October 1, 1981

Mr. LeRoy Allen
Walla Walla District, Corps of Engineers
Walla Walla, WA

Dear LeRoy:

This letter is in regard to an archaeological project that Washington State University is currently doing under contract with the Walla Walla District (Contract No. DACW68-81-C-0108). There are two changes of conditions from what we had originally planned and for which we are requesting a modification in the existing contract.

The results of the literature review and a brief reconnaissance conducted prior to initiating fieldwork clearly indicated that the expected cultural resources would include a scatter of "lagged out" campsites, possible pithouse villages represented by shallow depressions, and a badly vandalized burial site. Once the survey was initiated it became apparent that the density and character of cultural resources were far different from the expected. Most of the survey area contains cultural resources distributed over the surface in varying densities. Due to this almost continual distribution of materials it was neither effective nor efficient to conduct a site oriented survey. Rather, a spatially oriented approach designed to monitor the distribution of artifacts and features as opposed to sites was more practical. The expected "campsites" were far larger and more complex than anticipated.

The survey area contains relatively intact features such as hearths that are associated with high numbers of chipped, pecked, and battered stone tools as well as bone and shell remains in some cases. These features and artifacts are present on the surfaces and eroding from cutbanks. The islands and the shoreline contain depressions suggestive of pithouses; flooding has obscured readily apparent surficial pithouse features. Additionally, possible pithouse floors occur in the walls of some cutbanks. The recognition and preliminary assessment of these remains occur only after careful and systematic observations, that require a considerable expenditure of time. As expected, a badly vandalized burial area was recognized, but the same area also contains a considerable amount of material generally associated with campsites or pithouse villages. We have also encountered numerous, extensive and complex rock alignments that require both extra effort and time to record.

We were originally under the impression that the shoreline area owned by the Corps was about 100 feet wide. However, maps recently acquired from the Corps and a field search for boundary markers has demonstrated that width of the shoreline property under Corps jurisdiction far exceeds 100 feet in many places (it approaches 400 feet in some places). Thus we are faced with surveying considerably more area than anticipated at the time of award of the contract.

The documentation of these cultural resources in a thorough and scientific manner that facilitates interpretation, assessment of significance in terms of the National Register, and cultural resource management is extremely time consuming. To date we have surveyed all islands between river miles 340 and 348. In addition, we have surveyed the west bank of the Columbia River between river miles 347.6 and 348. This includes six islands, but excludes the downstream two miles of Wooded Island. We believe that the fieldwork already completed has been both thorough and scientific. However, it is not possible within the maximum time allowed for fieldwork to continue documentation in the manner we have established and still complete the survey of all Corps lands between river miles 340 and 350.

While the survey could be completed in a less thorough manner during the remaining field time, we believe it would be more effective and efficient to maintain thorough documentation methods and reduce the amount of land to be surveyed under the present contract.

We propose a contract change order that would limit the area to be surveyed under the present contract to all islands between river miles 340 and 348 and to the west bank of the Columbia River between river mile 345 and 350. With the possible exception of Wooded Island, these areas may contain the most complex cultural manifestations in the survey area. In conjunction with the proposed contractural modifications we suggest the remaining areas including river miles 340 to 345 on the west bank, river miles 340 to 350 on the east bank, and the lower two miles of Wooded Island be surveyed next year. By employing thorough and systematic survey techniques, we believe it is possible to gather most if not all of the information necessary to assess the cultural resources of the study area in terms of National Register criteria. This approach would in effect eliminate the major testing phase often necessary to assess for National Register eligibility.

Sincerely,

Alston Thoms

Alston Thoms
Project Supervisor

Randall F. Schalk

Randall Schalk
Principal Investigator

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
BUILDING 602, CITY-COUNTY AIRPORT
WALLA WALLA, WASHINGTON 99362

REPLY TO
ATTENTION OF

NPWSU-CS 81 OCT 19

SUBJECT: Contract No. DACW68-81-C-0120, An Archaeological Survey of the Upper McNary Reservoir (Letter Modification No. P00002)

Washington State University
Laboratory of Archaeology and History
Pullman, WA 99164

Gentlemen:

In accordance with your letter dated 1 October 1981, it has been determined to be in the best interest of the Government to modify this contract to limit the survey to certain areas. This will neither increase or decrease the amount of surveying to be done. Accordingly, the contract is modified in the following particulars, but in no others:

Article 1, Character and Extent of Services. Subparagraph a, change the first sentence to read as follows:

"Necessary labor, material, and equipment to perform an archaeological survey of all islands between river mile 340 and 348 and the west bank of the Columbia River between river miles 345 and 350."

It is understood and agreed that, pursuant to the above, the time for performance and the contract amount remain unchanged as a result of this change.

A formal modification incorporating this change will not be issued.

Sincerely,

THOMAS N. TURNBOW
Contracting Officer

WASHINGTON STATE UNIVERSITY

PULLMAN, WASHINGTON 99164

December 1, 1981

LeRoy Allen
Archaeological Coordinator
Department of the Army
Walla Walla District,
Corps of Engineers
Building 602, City-County Airport
Walla Walla, Washington 99362

Dear LeRoy;

The proposal for "Phase II of the Archaeological Survey of the Upper McNary Reservoir" is enclosed as are two copies. It is our understanding that $50,000.00 are potentially available for the inventory level investigations: Phase I of the survey (Contract No. DACW68-81-C-0120) was for $23,421.00 and this proposal is for $26,571.00, bringing the total amount for the inventory survey to $49,992.00. We would like to see the contract awarded by January 4, 1982, so as to eliminate scheduling problems and permit interfacing with our ongoing investigations.

Based on your November 24, 1981, telephone conversation with Mr. Alston Thoms, we now anticipate submitting a brief descriptive report of the results of the Phase I survey to your office on or before February 28, 1981. The Phase I report would in effect be an interim report for the overall inventory survey of Upper McNary Reservoir. A final report including the results of the proposed survey and the overall inventory survey results would be submitted on or about May 31, 1982, depending upon the time expended during the review process.

Please contact us if you have any additional questions.

Sincerely,

Randall F. Schalk

Randall F. Schalk
Principal Investigator

RFS/ce

Enc.

WASHINGTON STATE UNIVERSITY

RESEARCH PROPOSAL

TO: U.S. Army Corps of Engineers, Walla Walla District

TITLE OF PROJECT: Phase II of the Archaeological Survey of the Upper McNary Reservoir

PRINCIPAL INVESTIGATOR: Randall F. Schalk
Research Associate
Laboratory of Archaeology and History

AMOUNT REQUESTED: $26,571.00

SIGNATURES:

Randall F. Schalk, Principal Investigator
Laboratory of Archaeology and History

R. D. Daugherty, Director
Laboratory of Archaeology and History

Lois B. DeFleur, Dean
Humanities and Social Sciences

C. J. Nyman, Dean
Graduate School

PHASE II OF THE ARCHAEOLOGICAL SURVEY OF THE UPPER McNARY RESERVOIR

Research Proposal

I. INTRODUCTION

This proposal describes a cultural resources inventory survey to be performed along selected portions of the Columbia River on lands managed by the Walla Walla District, U.S. Army Corps of Engineers. The proposed survey encompasses the following areas: (1) river miles 340 to 345 on the west bank of the Columbia River; (2) river miles 340 to 350 on the east bank of the Columbia River; and (3) Wooded Island, lying approximately between river miles 348 and 350. Its purpose would be to inventory cultural resources and recover information necessary to make a preliminary assessment of their National Register eligibility. By employing thorough and systematic survey techniques, we believe it is possible to gather most if not all of the information necessary to assess the cultural resources of the study area in terms of National Register criteria.

As stated in our letter of October 1, 1981, to Mr. LeRoy Allen of the Walla Walla District, Corps of Engineers, a thorough and systematic survey such as that proposed for this specific study area could eliminate the major testing phase often necessary to assess eligibility. However, given the diverse nature of the area's geomorphology, a limited or modest testing phase could be necessary at some time in the future to make final recommendations regarding National Register eligibility. The modest level could entail cutbank profiling and some test pit excavation on islands and

along the west and east banks. On the shorelines cutbank profiles and test pits do not provide data on the full spatial extent of deposits as they would on the islands due to the limits of Corps lands. It is emphasized that during the proposed investigations every reasonable effort will be made to gather enough information to make final eligibility recommendations based on survey generated data alone. It is also emphasized that in some cases the more "destructive" techniques inherent in testing activities may be necessary to make final recommendations. This, however, would be a future project requiring a separate proposal. Thus it is necessary to clearly note that the purpose of the proposed project is to produce preliminary if not final information necessary to assess the study area according to National Register criteria.

The following section provides background information regarding the rationale for the proposed work as an augmentation of work presently being conducted in the area. Other sections outline the current status of ongoing work as well as theoretical and methodological objectives for the proposed investigations, as well as scheduling, personnel and budgetary considerations.

II. PROJECT BACKGROUND

The investigations herein proposed represent a continuation of work currently being performed under Contract No. DACW68-81-C-0120 between the Walla Walla District Army Corps of Engineers and the Laboratory of Archaeology and History at Washington State University, Pullman, Washington. As originally stipulated in Contract No. DACW68-81-C-0120, the overall survey tract included lands managed by the Corps of Engineers from river miles 340 to 350 in Benton and Franklin counties, Washington. The stated purpose of that contract was to inventory cultural resources between river miles 340 and 350 and recover information necessary for assessing their National Register eligibility. Survey work was to be conducted in a detailed and systematic fashion that would result in the accumulation of data beyond those generated by previous reconnaissance level surveys. Upon initiating the survey (under Contract No. DACW68-81-C-0120) it became obvious that the density and quantity of cultural resources was far greater than anticipated. Furthermore, as revealed by acquisition of Corps of Engineers' land ownership maps and a field search for boundary markers, the acreage to be surveyed turned out to be much more than expected. It was not possible, given these circumstances, to conduct a thorough and systematic survey of all the lands specified within the allotted time frame and for the allocated funds. Consequently, a contract modification that reduced the amount of land to be surveyed was requested by the Laboratory of Archaeology and History and approved by the Walla Walla District Corps of Engineers.

Pursuant to the Corps' Letter of Modification No. P0002, the area to be surveyed under Contract No. DACW68-81-C-0120 included " . . . all islands between river miles 340 and 348 and the west bank of the Columbia River between river miles 340 and 345. The area was surveyed between

September and November of 1981. In conjunction with the request for a contract modification, the Laboratory of Archaeology and History suggested that the remaining lands be surveyed under a separate contract.

This proposal is for the survey of the remaining lands between river miles 340 and 350 of the Columbia River encompassing Corps of Engineers' land on the east bank (river miles 340 to 350), and west bank (river miles 340 to 345) as well as Wooded Island.

III. CURRENT STATUS: CULTURAL RESOURCE INVESTIGATIONS IN THE UPPER McNARY RESERVOIR

Prior to the 1940s, the major archaeological investigations in the general vicinity of the project were those conducted by Herbert Krieger, but he did not emphasize the immediate study area. In the late 1940s Phillip Drucker briefly reported about 20 sites between river miles 340 and 350. In the late 1960s and continuing through the 1970s, David Rice surveyed portions of the area and recorded approximately 20 additional sites in the study area. Several of Rice's sites overlap each other as well as some of those recorded by Drucker. At least three additional sites were documented by Gregory Cleveland in 1976. Finally, several sites were discovered and/or redocumented in conjunction with highway survey projects during 1980-81. These surveys have recorded various kinds of sites including "pithouses," "open campsites," "fishing stations," "flaking floors," and at least one "rock alignment."

Although portions of the area between river miles 340 and 350 had been previously reconnoitered, it was found that there were insufficient data available to make eligibility determinations for the National Register. As noted, the Laboratory of Archaeology and History was awarded a contract (DACW68-81-C-0120) to conduct a thorough and systematic surface survey of portions of that area with the goal of gathering sufficient information to make recommendations regarding National Register eligibility.

Upon initiating the survey it became apparent that cultural materials or evidence of past cultural activities were continuously distributed over much of the study area, rendering designation of site boundaries most difficult. Fortunately ground visibility was more than adequate in most places including sand dune areas, and many cutbanks naturally exposed the subsurface

deposits. Rather than attempting to determine site boundaries in a traditional fashion (i.e., presence/absence of artifacts), a non-site or spatial approach was designed to monitor the distribution of artifacts and features over the surface. "Site areas" or areas of varying densities/types of artifacts would be determined in the analysis stage.

The area was surveyed by walking parallel transects approximately 30 meters wide and flagging observed artifacts and features. Each transect was divided into sections 50 meters (paced) long. Semi-permanent stakes were place periodically along island and shore transects to allow relocation of the various 50 meter units. Contoured sketch maps indicating the 50 meter units were drawn for the entire survey area. All documentation, including artifact/feature descriptions, photographs, geomorphic surfaces, sediments information and vegetation was recorded relative to the 50 meter units. Additionally, the kinds and depths of artifact/features observed in cutbanks were documented in notes, profile sketches, and photographs.

With the exception of the northern ends of most islands, evidence of past human activity was found in almost all 50 units. Density of chipped, battered and pecked stone objects ranged from none to well over fifty per 50 meter unit. Coarse/medium-grained cobble tools were the most common kind, but "cryptocrystalline" artifacts were widespread. Fire-cracked rock was present at very low (i.e., 1 to 5 pieces per 5x5 meter unit) to very high (i.e., more than 50 pieces per 5x5 meter unit) levels in almost all units. Shell and bone fragments were also present in much of the area. Aboriginal features observed on the surface include probable hearths, discrete concentrations of chipped stone tools, depressions suggesting pithouses, and concentrations of shell fragments Those discovered in cutbanks included probable pithouse floors, hearths, possible pits, dense shell

concentrations and midden-like deposits as well as individual chipped, battered, and pecked stone artifacts, bone and shell fragments, and fire-cracked rocks. Depths of cultural material range from 10 to more than 150 cm beneath the surface.

The islands exhibited only limited quantities of historic materials including some trade beads. Tin cans and other metal fragments constitute most of the pre-1940 historic material. The west shore yielded abundant evidence of probable nineteenth century placer mining activities, at least some of which may be attributable to Chinese miners between about 1860 and 1880. Artifacts that may be related to mining activities include several metal "rocker" screens, and possibly the soldered seam tin cans, which also could be early nineteenth century. Some Depression era mining may also have taken place in the study area. The remains of pre-1940 homesteads were also discovered as were numerous small trash dumps with artifacts dating between about 1915 and 1945.

The survey revealed that "pot hunting" has and is occurring both on the islands and shores. Furthermore, recent small scale construction activities (e.g., roads and water pump installations) along the west bank have had adverse impacts to cultural resources.

Based on the results of the survey conducted on the islands and portions of the west shore as well as a brief reconnaissance of part of the adjacent areas, it is evident that the study area (river miles 340 to 350) contains vast quantities of exceptionally well preserved cultural remains. It is anticipated that the proposed survey area contains remains similar to those mentioned in the preceding paragraphs. The east shore in particular may well contain different kinds of, and perhaps older, materials because the geomorphology is unlike that of areas already surveyed.

IV. PROJECT OBJECTIVES

All work conducted in conjunction with the proposed survey would be directed toward gathering data necessary to assess the area's cultural resources in terms of their eligibility for inclusion on the National Register of Historic Places. Such assessment must take place within a regional theoretical framework that forms the basis for the project's research objectives. The theoretical orientation and hence research objectives are achieved via the project's methodological orientation or the methods and techniques employed to gather and analyze data relevant to the stated problems. Both the theoretical and methodological orientations of the proposed project are outlined below.

Theoretical Orientation/Research Objectives

The research objectives stated in the original proposal for the Upper McNary Reservoir Survey (submitted to the Walla Walla District by Randall Schalk and R. D. Daugherty in the spring of 1981 and resulting in Contract No. DACW68-81-C-0120) are also valid for this proposal. As stated in that document, the "Sanpoil-Nespelem Model of Plateau Culture" would be examined in the light of the survey results. According to the model, only winter villages and fishing camps would be expected to occur within the study area. Furthermore, the site locational patterns and site contents are predicted to have remained essentially static over the past 3000-4000 years.

There are then two basic research objectives or questions that stem directly from the model and can be addressed from the survey data: (1) Do the artifact assemblages reveal a dichotomy between winter villages and fishing camps or other kinds of sites? and (2) Assuming that temporally

diagnostic artifacts (e.g., projectile points) are relatively common and sites can be stratified according to age, does the archaeological record indicate little change in settlement systems during the last 3-4,000 years?

Data generated thus far from the survey of part of the area between river miles 340 and 350 suggest that the kinds of sites or artifacts and features over the landscape are not readily placed into one of two kinds of sites: winter villages or fishing camps. Rather, the nature of cultural materials observed are roughly similar throughout the area, yet there are numerous and somewhat subtle differences in kinds and densities of artifacts/features across the landscape. In other words, a clear pattern of winter village and/or fishing camps is not readily apparent. The archaeological record with regard to site function is much more complex than predicted by the model.

Little can be said about *chronology* within the areas thus far surveyed. Although possibly abundant in the site deposits, projectile points and other diagnostic artifacts are rare on the surface. Furthermore, the geomorphic surfaces examined to date may represent only a relatively short period of time, perhaps no more than the last 3000-4000 years. However, chronological data may be forthcoming in the form of such occurrences as changes in the relative frequencies of artifact types or presence/absence of non-projectile point but yet potentially diagnostic artifacts. The relative integrity of surface features as well as comparisons of cultural materials situated on different kinds of geomorphic surfaces may provide additional clues to "site" chronology. As more area is surveyed, information gathered and data processed, it will be possible to address more thoroughly the research questions generated from the Sanpoil-Nespelem model.

As a result of having conducted the survey of part of the study area, a number of additional, but related research problems can be raised and addressed regarding the differences observed in the distribution of aboriginal cultural materials. These problems revolve around the spatial distribution of different kinds of artifacts and features, the different densities of cultural material in general, and their occurrence on different geomorphic surfaces. While it may not be possible to resolve the stated questions, it should be possible to develop working and testable hypotheses that explain the observations.

It is important first to understand the nature and distribution of the cultural remains. This goal must begin with sound descriptions of field observations. Second, it is necessary to detect patterns in the distribution of artifacts/features by asking and answering a series of questions designed to address the function and chronology questions raised earlier. Questions that will be addressed include the following.

(1) Can discrete areas be classified according to the kinds (i.e., artifact assemblages) of and/or densities of cultural materials?

(2) If so, are the kinds of areas related to different topographic settings?

(3) Is it possible and reasonable to infere "activities" from the different kinds of areas?

(4) How do the different kinds of areas or sites relate to (augment or debunk) the winter village versus fishing camps concepts of the model?

Assuming that "sites" or areas can be classified in a meaningful fashion it may be possible to examine the questions of whether or not any of the differences are related to ethnographically defined territorial boundaries. Recent investigations by Allan H. Smith suggest that ethnographic territorial boundaries, particularly between the Wanapam and

neighboring groups, occur within the study area. Data derived from the survey of the study area would be useful in examining the question of whether or not differences in artifact/feature types and/or "site" locations on geomorphic surfaces correlate with suspected territorial boundaries. This could be accomplished by comparing and contrasting the southern and northern portions of the study area, as well as the east and west banks of the river, and finally the islands with the east and west banks.

Another important research topic raised as a result of the current survey is that concerning mining activities. Since so little is known about these activities in the study area, it is necessary to gather baseline data. This aspect of research must also begin with sound and reliable descriptions. Furthermore, it must be coupled with detailed historical and documents research. This level of investigation is beyond the scope of the proposed project.

The immediate historical research objective of the project will be to provide descriptions of the kinds of artifacts and features observed in the field. This task will be conducted in conjunction with preliminary historical research designed to determine when the mining and other historical activities occurred and what if any role was played by the Chinese. If the Chinese were primarily responsible for mining in the area, documentation of this could prove extremely significant to regional ethnic history and behavioral patterns. Achievement of these objectives should permit the development of other more substantial research questions or problems. Examples include:

(1) What economic role did mining play in the region?

(2) If some of the mining was done by Chinese, how can it be distinguished from that by other ethnic groups?

(3) Given that mining occurred in the area, where were the mining camps and what behavioral patterns are represented?

Another important question concerning historical activities relates to their impact on aboriginal cultural resources. Mining, homesteading, Hanford AEC activities, and possibly military actions have had adverse effects on the area's aboriginal cultural resources. Efforts will be made to address these relationships. For example, an interesting problem is that of distinguishing among aboriginal fishing features (e.g., wall and traps), nineteenth century placer mining, reoccupation by historic Indian groups possibly engaged in fishing, Depression era mining and post-1940 AEC or military operations on the "gravel bars."

Methodological Orientation/Field and Laboratory Methods

Background preparations, including the literature search and review will continue throughout the project. This will provide the basis for evaluating the significance and making recommendations for the area's cultural resources. Prior to fieldwork a set of forms, based on work conducted thus far, will be developed for use in monitoring/describing observed artifacts/features by 50 meter units.

The initial part of fieldwork will be to conduct a reconnaissance of the survey area. During the reconnaissance the area will be divided into 50 meter units, with labeled flagging tape indicating each unit's location. Semipermanent labeled stakes will be placed periodically along the transects to allow relocation of the 50 meter units. The survey area will be defined using the Corps' 1951 McNary Reservoir contour planning maps and related property maps.

Survey procedures will involve a 2-person crew walking approximately 30 meter parallel transects. Observed artifacts and features will be described and plotted on contour sketch maps. However, when the density of artifacts is high, the number of artifacts will be estimated.

In general, the overall documentation will remain compatible with the previous survey. While this is fundamental, it is also necessary to recognize and react accordingly to significant differences in the degree of modern disturbances. Most of the area previously surveyed was relatively undisturbed. In the relatively undisturbed areas yet to be surveyed documentation will be compatible with the previous survey. However, much of the west bank of the Columbia River south of the Hanford 300 Area, is severely disturbed as a result of industrial and residential development. Portions of the east bank are also severely disturbed due to road construction, agricultural practices, and residential development. In these areas fieldwork will concentrate on the shoreline. Efforts will be directed toward documenting the presence/absence of artifacts and features as opposed to concern with their spatial placement.

Wooded Island also presents a special problem since it is already listed on the National Register. Fieldwork there will be aimed at augmenting rather than duplicating the information presently available. This will entail sketch mapping the location of probable pithouse depressions found in the sandy alluvium, sketch mapping relatively intact surface features (e.g., hearths), examination of cutbanks, documentation of cultural materials in the cutbank, and monitoring of relative densities and kinds of artifacts observed on the surface.

A basic no-collection policy will be maintained throughout the survey, as was the case with the previous survey.

The analysis or laboratory phase of the project will be concerned with data derived from the survey of all Corps lands between river miles 340 and 350. [Preliminary results from the survey of islands between river miles 340 and 348 as well as the west bank between river miles 345

and 350 will have already been submitted to the Walla Walla District in fulfillment of Contract No. DACW68-81-C-0120.] Analysis will be threefold, consisting of description, manipulation, and interpretation of the data.

As specified in the previous proposal, cultural remains will be plotted on aerial photographs and topographic maps provided by the Corps of Engineers. WSU site forms will be completed for the recorded resources after consultation with personnel representing the Washington Archaeological Research Center. Such consultation will be necessary to determine how to deal with the problems of overlapping "sites" and the continuous distribution of cultural materials in the study area.

The descriptive part of the analysis phase will concentrate on field methods and the kinds and densities of artifacts/features. Manipulation of the data will be computer aided and designed to classify and correlate the various kinds of cultural materials and resources. Interpretations will be made within the framework of the stated research design or orientation.

It must be emphasized that data derived from the survey work may not be adequate to make final recommendations for National Register eligibility. Some additional work as part of a future contract may be necessary. Future work could include the following kinds of activities:

(1) Historical research (e.g., deed and courthouse records, as well as diary/journal reviews, and personal interviews) aimed at documenting the precise nature of mining activities, especially as they relate to the Chinese.

(2) Cleaning and preparing detailed profiles of existing cutbanks.

(3) Small test pits and/or auger exploration to determine site boundaries behind or away from the shoreline.

(4) Test pit excavation in areas where the subsurface is not adequately exposed and where cultural materials are likely to occur.

(5) Test pit excavation to provide quantitative data concerning the precise nature of materials expected to be recovered from buried "sites."

(6) Systematic surface collections to gather precise spatial and quantitative data in areas where the materials are expected to be relatively in situ.

As noted earlier, these methods are destructive to the archaeological record. A modest exploratory testing program may be necessary to provide all the information necessary to make recommendations for the National Register significance. Major testing efforts or mitigation of significant resources would then proceed only if these nonrenewable cultural resources were in danger of loss.

IV. PROJECT PERSONNEL

Dr. Randall Schalk will serve as the project's Principal Investigator. His input will be primarily that of an advisor with report review responsibilities. No time will be billed against the project for his service. Dr. Schalk's vita is attached.

Mr. Alston Thoms will serve as the Project Director. He will be involved at the half-time level for five months. His duties will be both administrative and technical; he will periodically participate in the reconnaissance and fieldwork. Most of his responsibilities will revolve around analysis and report preparation, especially in integrating the results of the previous survey. Mr. Thoms' vita is attached.

Ms. Sheila Bobalik will serve as the Project Archaeologist, involved on a full-time basis for two months. She will be directly responsible for conducting fieldwork and preparing the descriptive sections of the proposed survey report. Ms. Bobalik will also work closely with Mr. Thoms during the preliminary analysis and report preparation phases of the project. She has considerable experience in the mid-Columbia area and the Northwest in general.

The remaining positions--field, laboratory and office assistants, and draftsperson--will be filled after award of the contract. Individuals with appropriate experience will be selected.

V. TENTATIVE PROJECT SCHEDULE

The following chart presents the proposed work schedule.

Dates	Tasks	Location	Personnel
January 4 to January 8, 1982	Background preparation, reconnaissance of survey area	Pullman, Survey Area	Principal Investigator, Project Director, Project Archaeologist
January 11 to February 4, 1982	Field survey, analysis of incoming data	Pullman, Survey Area	Principal Investigator, Project Director Project Archaeologist, Field Assistant
February 8 to February 26, 1982	Description, preliminary analysis and data manipulation, and report preparation	Pullman	Principal Investigator, Project Director, Project Archaeologist, Laboratory Assistant
March 1 to April 2, 1982	Final analysis and data manipulation, preliminary interpretations, rough draft of report	Pullman	Principal Investigator, Project Director, Laboratory Assistant, Office Assistant, Draftsperson
April 5 to May 14, 1982	Final interpretations and preparations and submission of final draft report	Pullman, Walla Walla	Principal Investigator, Project Director, Office Assistant, Draftsperson
May 17 to May 31, 1982	Review of draft report, preparation and submission of final report	Pullman, Walla Walla	Principal Investigator Project Director, Office Assistant, Draftsperson, Corps Personnel

As noted in the above chart, fieldwork is scheduled for January and February. This presents some problems considering the region's winter dominant precipitation regime. It is also in the early winter that water levels are relatively low and vegetation cover is far less than in the spring to fall time period. These factors outweigh the inclement weather because ground exposure is greatly improved. During fieldwork, up to four days of poor weather can be absorbed within the proposed budget/schedule by working

weekends as opposed to week days. If, however, more than four days of fieldwork are lost to inclement weather, adjustments (i.e., contract modifications) will have to be made. These would entail either reducing the area to be covered or increasing the level of funding and time allotted for fieldwork.

VI. PROPOSED BUDGET

Sufficient funds are allowed to carry out fieldwork under current expectations. These include understanding that significant portions of the survey area are severely disturbed and do not demand the same intensity of coverage as do the relatively undisturbed areas. It is also understood that the remaining west and east banks under Corps jurisdiction do not generally exceed 50 meters in width and are clearly delimited by boundary markers and/or high terraces or escarpments. (During the Phase I survey widths of greater than 100 meters were commonly covered. We do not expect to continue this level of coverage.) The budget allows for loss of four week days of field time than can be compensated for by working four weekend days. Deviations from these expectations may require contract modifications.

It should also be noted that the costs involved in report preparation, computer fees, office assistant and draftsperson time is less than expected for a project of this nature. This is because the funds available under Contract No. DACW68-81-C-0120 partially offset these costs.

The proposed budget is presented on the following pages.

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
BUILDING 602, CITY-COUNTY AIRPORT
WALLA WALLA, WASHINGTON 99362

REPLY TO
ATTENTION OF

NPWSU-CS 81 DEC 16

SUBJECT: Contract No. DACW68-81-C-0120, An Archaeological Survey of the Upper McNary Reservoir, Modification No. P00003

Washington State University
Laboratory of Archaeology & History
Pullman, WA 99164

RECEIVED
DEC 1 1981
LAB. OF ARCHAEOLOGY AND HISTORY

Gentlemen:

Your 1 December 1981 proposal is accepted in the amount of $26,571 for archaeologial survey of the remaining lands between river miles 340 and 345 on the west bank of the Columbia River, river miles 340 to 350 on the east bank of the Columbia River, and Wooded Island which lies approximately between river miles 348 and 350. You are directed to proceed with this work.

A formal modification incorporating this change will be issued in the near future.

Sincerely,

THOMAS N. TURNBOW
Contracting Officer

WASHINGTON STATE UNIVERSITY
PULLMAN, WASHINGTON 99164 -1030

THE GRADUATE SCHOOL
Office of Grant & Research Development

February 12, 1982

U.S. Army Engineer District
Walla Walla, Corps of Engineers
Bldg. 602
City-County Airport
Walla Walla, WA 99362

In Reply Please
Refer to: 11030

Reference: Modification No. 3 to DACW68-81-C-0120

Gentlemen:

Enclosed please find one fully executed copy of the above referenced modification. If you have any questions concerning this project or any other official correspondence please contact the Office of Grant and Research Development, (509) 335-9661.

Sincerely,

J. J. Wills
Associate Director

JJW:ceb
Enclosure
cc: R. F. Schalk

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ORIGINAL

STANDARD FORM 30 JULY 1966
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.101

~~AMENDMENT OF SOLICITATION~~/MODIFICATION OF CONTRACT

PAGE 1

1. ~~AMENDMENT~~/MODIFICATION NO.	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
P00003	81 DEC 16		McNary Lock and Dam

5. ISSUED BY CODE

U.S. ARMY ENGINEER DISTRICT,
WALLA WALLA, Corps of Engineers
Bldg. 602, City-County Airport
Walla Walla, Washington 99362

6. ADMINISTERED BY (If other than block 5) CODE

7. CONTRACTOR NAME AND ADDRESS CODE FACILITY CODE

(Street, city, county, state and ZIP Code)

WASHINGTON STATE UNIVERSITY
Laboratory of Archaeology & History
Pullman, WA 99164

8. ~~AMENDMENT OF SOLICITATION NO.~~

DATED (See block 9)

[x] MODIFICATION OF CONTRACT/~~ORDER~~ NO. DACW68-81-C-01..

81 JUL 28

DATED (See block 11)

~~9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS~~

[ ] The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers [ ] is extended, [ ] is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning ___ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)

96x3123, Operation and Maintenance, General, Corps of Engineers, Civil, McNary Lock and Dam

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/~~ORDERS~~

(a) [x] This Change Order is issued pursuant to Article 5, CHANGES.
The Changes set forth in block 12 are made to the above-numbered contract/order.

(b) [ ] The above-numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) [ ] This Supplemental Agreement is entered into pursuant to authority of ___ It modifies the above-numbered contract as set forth in block 12.

12. DESCRIPTION OF ~~AMENDMENT~~/MODIFICATION

Confirming directive letter dated 16 December 1981, it has been determined necessary and in the best interest of the Government to modify this contract to provide for archaeological survey of additional lands along the Columbia River between river miles 340 and 350. Accordingly, the contract is modified in the following particulars, but in no others:

a. Page 1, Contract Amount, delete "$23,421.00" and insert "$49,992.00" in lieu thereof.

FUNDS AVAILABLE
DEC 23 1981

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. The Contractor is requested to indicate acceptance of this document in blocks 14, and 16, and return the original to administering office.

14. NAME OF CONTRACTOR/~~OFFEROR~~

BY (Signature of person authorized to sign)

15. NAME AND TITLE OF SIGNER (Type or print)

16. DATE SIGNED

17. UNITED STATES OF AMERICA

BY (Signature of Contracting Officer or Authorized Representative of the Contracting Officer)

18. Typed Name and Title

W. R. GALL
Contracting Officer

19. DATE SIGNED
81 Dec 24

30-101-01

b. Article 1, Character and Extent of Services. Subparagraph a, insert the following after the first sentence:

"Necessary labor, material, and equipment to perform archaeological survey work along the Columbia River as follows: (1) river miles 340 to 345 on the west bank of the Columbia River; (2) river miles 340 to 350 on the east bank of the Columbia River; and (3) Wooded Island, lying approximately between river miles 348 and 350."

c. Article 2, Period of Services. Delete "3 May 1982" and insert "17 September 1982."

d. Article 3, Compensation to the Contractor. Subparagraph a, delete "$23,421.00" and insert "$49,992.00"; delete "$3,421.00" and insert "$29,992.00."

e. Article 4, Method of Payment. Revise as follows:

(1) Delete subparagraph b and insert the following:

"b. $26,571.00 after completion of additional survey work and analysis by 31 May 1982."

(2) Add new subparagraph c as follows:

"c. $5,421.00 after completion of the laboratory analysis, submittal of the final report, and approval by the Contracting Officer."

It is understood and agreed that, pursuant to the above, the time for performance is extended to 17 September 1982 and the contract amount is increased by $26,571.00, resulting in a revised total contract amount of $49,992.00 as a result of this change.

WASHINGTON STATE UNIVERSITY

PULLMAN, WASHINGTON 99164

October 21, 1982

Mr. LeRoy Allen
Archaeological Coordinator
Department of the Army
Walla Walla District, Corps of Engineers
Building 602, City-County Airport
Walla Walla, Washington 99362

Dear LeRoy,

We appreciate the extraordinary opportunity to participate in the meeting attended by Dr. Geoffrey Gamble, Dr. William Lipe, John Leier, and you. It provided an unusual opportunity to discuss important issues of mutual concern. This letter is a follow-up to that meeting held on October 1, 1982 at the Department of Anthropology and to recent telephone conversations regarding the Upper McNary project. The meeting and related telephone conversations were in response to your concerns about the review copy of the report entitled "Archaeological Investigations in Upper McNary Reservoir, 1981-1982," which was reviewed and approved by you on September 17, 1982. That report, by Alston Thoms and others, documented the results of a survey and provided management recommendations in compliance with contract number DACW68-81-C-0120 between the U. S. Army Corps of Engineers, Walla Walla District and the Laboratory of Archaeology and History, Washington State University.

Your concerns and suggested revisions of the report's contents as we discussed and understood them were as follows:

1. The foreword, by Randall Schalk, was deemed inappropriate for the report and it was suggested that the foreword be deleted from the final report.

2. The reference to "quick and dirty" fieldwork was found to be objectionable and it was recommended that the statement not be included in the final report.

3. It was noted that the draft report contained in excess of 45 abbreviations that were very difficult to comprehend; explanatory keys were suggested as a means to alleviate the difficulties.

4. A number of typographical and grammatical errors were identified in the text; these were on pages iii, x, 27, 39, 42, 45, 46, 47, 48, 49, 50, 52, 53, 55, 56, 57, 58, 61, 62, 66, 71, 73, 83, 86, 95, 96, 100, 113, 114, 118, 120, 139, 144, 159, 161, 168, 173, 174, 177, 180, and 188 of the review copy of the draft report; it was recommended that they be corrected.

5. The management recommendations were judged to be difficult to understand and it was suggested that elimination of some of the "jargon" would simplify matters.

We have reacted to the above concerns in the following manner:

1. The foreword has been removed from the text and some of the points it raised have been incorporated into the last part of Chapter 5.

2. The reference to "quick and dirty" fieldwork has been deleted.

3. Explanatory keys have been added to the appropriate tables and figures throughout the text.

4. All identified typographical and grammatical errors have been corrected.

5. All abbreviations used in Chapters 5 and 6 have been either deleted or explained and the abbreviations used in Figure 34 have also been deleted or fully explained.

As discussed with and approved by you and John Leier during a telephone conversation with Alston Thoms on September 27, 1982, we have also made the following additions and/or changes for the revised final draft report:

1. Portions of the contract, including the "character and extent of services," proposals and correspondence relating to change orders have been added as part of Chapter 1 and Appendix A.

2. A general discussion of the nature and distribution of cultural resources on each island and along each shoreline has been added to Chapter 4.

3. A more explicit statement regarding recommendations and the usefulness of the report as a planning tool has been added to Chapter 6.

4. Numerous typographical errors have been corrected throughout the text.

In addition, and with your approval (on September 27, 1982), we submitted a copy (a revised version of the draft report) for review purposes to Dr. Robert Whitlam of the State Historic Preservation Office on October 5, 1982. We have already received a written, but informal review from Dr. Whitlam and have incorporated several statements into the final revised draft report in response to Dr. Whitlam's comments. It is our understanding that you have a copy of Dr. Whitlam's informal review comments.

Mr. LeRoy Allen October 21, 1982
Page 3

We are also enclosing two copies of our final revised draft report as requested by John Leier during a telephone conversation with Alston Thoms on October 13, 1982. It is anticipated that you will find the revisions to be in accordance with our discussions. We understand that you will send the second copy of the revised final draft to the Seattle District Corps of Engineers office for review and approval, inasmuch as that district has some management jurisdiction over the northern part of the survey area. Note of the pending review by the Seattle District has already been made in the acknowledgment section of the report. In accordance with your request we are not proceeding with printing the final report. Does this mean we should anticipate further revisions in response to the Seattle District's review? As the document now stands we need only to make a few minor changes (with regard to placement of headings) prior to printing the report.

Thank you for your attention.

Sincerely yours,

Randall F. Schalk

Randall Schalk
PRINCIPAL INVESTIGATOR

Alston Thoms

Alston Thoms
PROJECT DIRECTOR

RS/AT/kc

cc: Dr. Geoffrey Gamble, Chairman,
Department of Anthropology

JOHN SPELLMAN
Governor

JACOB THOMAS
Director

STATE OF WASHINGTON
OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION
111 West Twenty-first Avenue KL-11 • Olympia, Washington 98504 • (206) 753-4011

October 14, 1982

Randall Schalk, Ph.D.
Lab of Archaeology & History
Gladish 207
Washington State University
Pullman, WA 99164

Dear Dr. Schalk:

Thank you for sending us a copy of "Archaeological Investigations in Upper McNary Reservoir: 1981-1982" by Alston Toms et. al. We have circulated this document to our staff and offer the following preliminary comments. Please note these comments are in response to your request and do not constitute a formal review or approval by our office. We will provide a formal review upon request from the sponsoring agency.

Our staff was impressed by the innovative approach to the investigation, analysis, and reportage of discovered archaeological materials along an important segment of the Columbia River within Washington State. It is clear that the researchers expended substantial efforts in the planning and design of the field research strategy, the acquisition of field data, and the analysis of a wide variety of published and newly acquired empirical data pertaining to the cultural resources of the McNary Reservoir.

We offer the following brief specific comments for your consideration. Many of the issues we raise are by no means resolved within the profession and considerable debate and differences in opinion exist between various archaeologists.

Non-Site Archaeology

We commend the emphasis upon the study of the spatial distributions of artifacts; however, we believe there may be some differences between "non-site survey" versus "siteless survey" that merit discussion.

With a non-site survey, the base units are invariably the 50m or grouped 100m sampling unit. With the siteless survey, the base analytical units are created dependent upon an analysis of the spatial characteristics of the sampling tract, and thus may vary in shape and size dependent upon the selected definitional criteria.

These differences in approach may be important in subsequent analyses. For example, with the non-site survey, within unit spatial patterning may be obscured below the 50m or 100m unit level. Secondly, if the 50m/100m unit cross-cuts environments it could pose problems in establishing statistical correlations between cultural and environmental variables. While you have established a rule to systematically deal with this issue in the project, you may want to develop a methodological refinement to insure within unit environmental homogenity for future studies.

A third concern pertains to boundary definition for management purposes. Boundary justification in substantial excess of the particular material distribution within the 50m/100m unit could be a point of contention.

Geomorphic and Environmental Variables

Consideration of environmental variables and identification of the relevant geomorphic units would appear to represent an important aspect of a project such as this. Since a major goal of the project was the identification of associations between particular types of artifact aggregates and topographic/environmental features, an important question to address is the relative stability, antiquity and disturbance that has affected those environmental features. More discussion of the environmental/geomorphic variables may be warranted, especially consideration of the impact reservoir construction woud have on the evolution of landforms within the study area. A crucial issue is establishing that an association between the cultural material and a particular landform represents an aboriginal cultural adaptation, rather than an artifact of reservoir construction. To make strong arguments for associations between particular artifacts and given landforms may require a more detailed consideration and historical reconstruction of the geomorphic evolution of the study area.

A possibly unrealized benefit from your study is the excellent baseline data for artifact material and current environmental parameters. You quite clearly identify the distribution of kinds of remains with existing reservoir defined environments. Such information would seem particularly useful in developing managment plans for future land use concerns, and agency operating requirements.

Variable Definition

The range of variability in cultural material appears well considered and clearly defined. We would note, however, several classes may require further consideration. Classes such as BEB represent an example. BEB material that is the result of wear/use versus BEB material that is the result of taphonomic agents may be distinguished. This distinction would seem particularly appropriate in the study area where taphonomic processes such as fluvial actions may have a substantial impact upon the resource base.

Randall Schalk, Ph.D.
October 14, 1982
Page 3

Limiting Factors

The discussion and recognition of limiting factors in archaeological survey presents a thoughful discussion of possible sources of bias in the acquisition of archaeological data. We would note, however, rather than just an awareness of the problem, as a mitigative measure, other types of analysis may be developed to assess the impact upon field bias in data acquisition. For example, it may prove informative and useful to perform analyses of artifact recovery rates and size, color, etc., in relation to specific environmental parameters, time spent in the field, etc. Presumably the field crew would exhibit a learning curve similar to other business and learning situations. You may want to experiment in establishing a learning curve based on artifact size, type, color with contrasting matrix, vegetation cover, and field time, to identify units that represent optimum points on the learning curve. Those sample units that represent optimum conditions could then be used as benchmarks for your quality control assessments.

Cluster Analysis

The approach to cluster analysis appears well reasoned and alternative methods are discussed. It may prove informative at some future date to explore alternative clustering methods and their solutions. One approach that may prove informative would be to create similarity matrices on the basis of selected frequency data and then employ the created matrices for input into Multidimensional Scalegram Analysis. By having a MDSA solution presented in multidimensional space you may be able to investigate underlying dimensions of variability that were not readily apparent in the existing data.

Discussion, Conclusions, and Management Recommendations

We believe the discussion, conclusions, and the management recommendations represent well reasoned assessments based upon the acquired information. The authors clearly present reasoned interpretations of the data in regard to stipulated research questions and detail management considerations in relation to stated criteria. We believe the document represents a valuable contribution to the archaeology and management concerns of the area.

Thank you for this opportunity to comment.

Sincerely,

Robert G. Whitlam, Ph.D.
Archaeologist

dj

cc: LeRoy Allen, COE

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEER
BUILDING 602, CITY-COUNTY AIRPORT
WALLA WALLA, WASHINGTON 99362

REPLY TO
ATTENTION OF

Alston Thoms
Laboratory of Archaeology and History
Gladish 207
Washington State University
Pullman, WA 99164

Dear Alston: 22 November 1982

As requested during our telephone conversation of 16 October 1982, the comments made at this time regarding the contract report, Archaeological Investigations in Upper McNary Reservoir: 1981 - 1982 are being submitted to you on paper. These are:

1. Typographical and grammatical errors identified in the text on pages 40, 42, 54, 55, 58, 83, 86, 89, 94, 115, 136, 137, 158, 162, 163.

2. The mapping coordinates for the islands are stated as starting at the south end and going north. However, for the shorelines, a division into northern and southern segments was made and depending within which segment each survey unit was located, mapping coordinates could start from either the north or south end. Was there a particular reason for the difference in procedure between the islands and shoreline? (page 38)

3. Is it statistically valid to double the frequency count of single survey units to achieve comparability with combined units? By following this procedure, analysis is being made between units which are in fact, non-comparable in composition; one group being composed of actual frequency counts (combined) while the other group is composed of both artificial and actual frequency counts (doubled). Under these circumstances, analyses between units would produce skewed results. (page 60)

4. A copy of the Seattle District's review comments on your report will be sent to you as soon as they are received in our office.

If there is anything further we can do to be of help or assistance please feel free to call.

Sincerely,

John Leier

John Leier
Archaeologist

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEER
BUILDING 602, CITY-COUNTY AIRPORT
WALLA WALLA, WASHINGTON 99362

REPLY TO
ATTENTION OF:

December 8, 1982

NPWPL-ER

Dr. Randall Schalk
Laboratory of Archaeology and History
Gladish Building 207
Washington State University
Pullman, Washington 99164-1352

Dear Dr. Schalk:

Enclosed is a copy of the Seattle District's review on "Archaeological Investigations in Upper McNary Reservoir: 1981-1982" as requested.

Sincerely,

LeRoy V. Allen
LeRoy V. Allen
Authorized Representative
of the Contracting Officer

Enclosure

NPSEN-PL-ER

29 Nov 1982

REVIEW COMMENTS: "Archeological Investigations in Upper McNary Reservoir: 1981-1982," by Alston Thoms and Others. Project Report 15, Laboratory of Archeology and History, Washington State University, Pullman. (DACW68-81-C-0120)

1. General Comments:

a. The contractor for the subject survey work was Washington State University. Project personnel were highly qualified and all had former archeological field experience in the region.

b. Adequate time was spent in the field (150 person-days) for the conduct of an intensive archeological survey of a 10.9 mile river segment covering shorelines on both banks as well as all islands.

c. The contractor's proposal properly and clearly elaborates and clarifies the contract statement of work which requires a survey between River Mile 340--350. The final report faithfully reflects the proposal submitted to NPW at the inception of the contract.

d. If the primary purpose of the contract was to gather sufficient information to determine National Register eligibility of the study area, it is not clear why the survey includes two river miles (R.M. 348-350) already included on the National Register (the Wooded Island Archeological District) on lands administered by Department of Energy.

e. The survey study is justified by two very suitable testable research questions. These concern the distinction of artifact assemblages between winter villages and fishing camps, and the stability of settlement systems over the past 3000-4000 years. Methods employing cluster analysis and the geomorphic analysis of landforms within the study area provide adequate means of evaluating the test questions considering the time and cost frame established for the project. Some test excavations would tend to strengthen the evaluative framework for the second question, but it is true that much subsurface information was available in the exposed cutbanks along the shoreline.

f. The contractor employed the nonsite survey technique to tackle the difficult problem of ordering previous reconnaissance work which had resulted in many discrepancies concerning site locations and qualities. The effect of this innovative approach was documentation for an essentially continuous distribution of archeological material throughout the nearly 11 miles of the study area. The approach is valuable for creating a framework for evaluating earlier surveys and provides the first truly realistic view of the cultural resources in the study area. This type of survey appears to be very cost effective, amounting to about $30/acre for both intensive inventory and resource evaluation. The nonsite survey seems to be a less costly method of resource evaluation and should be considered a complementary method to test excavations in future intensive surveys. Although not suitable in some settings, the nonsite survey results in a maximum of documentation without incurring a curation liability in the way that test excavation does.

g. Specific management applications of the survey results need to be elaborated. Corps personnel need to be instructed as to how to use the information provided by the contractor in a variety of ways.

2. Specific Comments:

a. There should be an executive summary or at least a listing of significant observations and/or findings that is separate from the exhaustive cluster analyses for artifacts and landforms. Findings of importance are now lost in the body of analysis and discussion sections.

b. The cluster analysis of artifact categories may obscure some important differences between site types because of the fact that all categories of cultural material (ie, fire cracked rock, shell scatters, etc.) are included in the analysis. (Tables 12 and 22).

c. (Table 10, p. 91) The cultural materials stated to represent procurement activity, specifically shell and bone scatters, are likely to represent food preparation activity instead.

d. (p. 99-108, Fig. 34) Perhaps larger maps folded and inserted into an end pocket would be more appropriate and useful than the reduced versions. On p. 65 it is stated that the maps were reduced to fit 8½ by 11 inch paper. Both the detail and usability of maps might be greater with larger maps.

e. Many of the tables are difficult to read for lack of a more graphic code key. These tables may be formidable to nonspecialist planners.

f. (p. 160-61, Table 26) Should the entry for 45BN165 on p. 161 be for 45BN166 ? Since the site is listed twice in Table 26 it is presumed that one is in error.

g. The management consequences for the proposed National Register archeological district need to be discussed more broadly. For example, If the whole study area is regarded as a National Register district, then a Section 106 review may be necessary for an impact to any part of the district. This could prove to be a management burden.

h. There should be an explicit list of recommendations at the end of the section dealing with "management recommendations" (p. 163).

i. We concur with the recommendation to analyze and write up the materials of the Mid-Columbia Archeological Society recovered from McNary Reservoir. This should have higher priority over any new plans for test excavation within the project area since new tests may duplicate information already gathered and result in a further curation burden.

APPENDIX B

The Inventory List

KEY FOR APPENDIX B

Abbreviation	Descriptive Term
LOC	Location
SES,SEN	East shore: south fraction, north fraction
SWS,SWN	West shore: south fraction, north fraction
IAE,IAW	Island A: east side, west side
IBE,IBW	Island B: east side, west side
ICE,ICW	Island C: east side, west side
IDE,IDW	Island D: east side, west side
IEE,IEW	Island E: east side, west side
ITE,ITW	Tear Drop Island, east side, west side
IWE,IWW	Wooded Island, east side, west side
INW,INW	Nelson Island, east side, west side
BLOCK	50 m unit, numbered consecutively from 1
LAND	Landform
BLF	Island, beaches and low flat
EBL	Island, east beach through cut bank
WBL	Island, west beach through low flat
BHF	East or west shore, beach through high flat
BSD	West shore, beach through sand dune
BHG	West or east shore, beach through high gravel terrace
WTB	East shore, White bluffs, beach through slope

Artifacts/Features

FTA	Dispersed FCR feature
FTB	Discrete FCR feature
FTC	Intact FCR feature
BFCR	Beach zone, FCR
DFCR	Dune zone, FCR
HFCR	High flat zone, FCR
SSH	Surface shell feature
BSH	Buried shell feature
SCSH	Scattered shell feature
SCBO	Scattered bone
ALGN	Rock alignment
PILE	Cobble pile
DPRSS	Depression, probable housepit
HP	Housepit floor in cutbank

MFC	Minimall flaked cobble
UES	Uniface, sharp edge
UEB	Uniface, battered edge
UMS	Uniface, sharp edges
UMB	Uniface, battered edges
BES	Biface, sharp edge
BEB	Biface, battered edge
BMS	Biface, sharp edges
BMB	Biface, battered edges
CCORE	Chert core
NCORE	nonchert core
CFLK	Chert flake
NFLK	Nonchert flake
CEM	Chert, edge modified
NEM	Nonchert, edge modified
CBIF	Chert biface
NBIF	Nonchert biface
PPT	Projectile point
BTC	Battered cobble
PKC	Pecked cobble
GRND	Ground stone
NOTCH	Notched pebble
GROV	Grooved stone

Values are as follows:

FCR item density (BFCR, DFCR, HFCR), SCSH, SCBO densities

0 absent
1 very, very low
2 very low
3 low
4 medium
5 high
6 very high

all other artifacts, features (aboriginal)

0 to n number of occurrences per 50 m unit

Historic period evidence and contemporary phenomena

Values are as follows:

presence/absence

1 absent
2 present

MINE	Evidence of mining
STRUC	Historic structures
HSCAT	Historic artifact scatters
DUMP	Historic trash dump

RESID	Contemporary residences or industrial buildings
CONST	Construction (e.g., roads, landfills, intakes, itc.)
WATER	Water level obscured visibility at time of survey

INVENTORY LIST - EAST SHORE PAGE 1

LOC BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
SES280	BHF	0	0	0	1	3	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES279	BHF	0	0	0	3	4	0	0	0	0	3	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	2	2
SES278	BHF	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES277	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES276	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES275	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES274	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	2	2
SES273	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	20	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES272	BHG	0	0	0	0	3	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES271	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES270	BHG	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES269	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES268	BHG	1	0	0	0	4	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES267	BHG	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES266	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES265	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES264	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES263	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES262	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES261	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES260	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	2	2
SES259	BHG	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES258	BHG	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES257	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES256	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES255	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES254	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	2	2
SES253	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES252	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES251	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES250	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES249	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES247	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES246	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	2	2
SES245	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES244	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	7	0	6	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES243	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	2	2
SES242	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES241	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	2	2	2
SES240	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	7	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES239	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES238	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES237	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES236	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES235	BHG	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	1	1	1	1	1	2	2
SES234	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	2	2
SES233	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES232	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES229	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES228	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	2	2
SES227	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2

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BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFCR	DFCR	HFCR	SSH	BSH	CSH	SCBO	ALGN	PILE	DPRSP	HSP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CNBIF	NBIFF	PPT	BTC	PKC	GRND	NOTCH	GORV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
SES226	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES225	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES224	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES223	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES222	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES221	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES220	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES219	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	2	2
SES218	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES217	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES216	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES215	BHG	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES214	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SES213	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES212	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES211	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SES210	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES209	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES208	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SES207	BHC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SES206	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES205	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES204	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES203	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES202	BHG	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES201	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES200	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES199	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES198	BHG	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES197	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES196	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES195	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES194	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES193	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	2	2
SES192	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES191	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES190	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES189	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES188	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SES187	BHG	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES186	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	2	2
SES185	BHC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES184	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES183	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES182	BHG	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES181	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES180	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES179	BHC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES178	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES177	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES176	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2

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LOC BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUCT	HSCAT	DUMP	RESID	CONST	WATER
SES175	BHG	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES174	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES173	BHG	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES172	BHG	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES171	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES170	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	2	2
SES169	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES168	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES167	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES166	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES165	BHG	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES164	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES163	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES159	BHG	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES158	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES157	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES156	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES155	BHG	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES154	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	2	2	2
SES153	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES152	BHG	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES151	BHG	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES150	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES149	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES148	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES147	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES146	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES145	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES143	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES142	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES141	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES140	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES139	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES138	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES137	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES136	BHG	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES135	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES134	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES133	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES132	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES131	BHG	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES130	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES129	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES128	BHG	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES127	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES126	BHG	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES125	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES124	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES123	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES122	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES121	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2

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LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PIIE	DPRS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKCD	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
SES120		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES119		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES118		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES117		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES116		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	2	2	2
SES115		BHG	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES114		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES113		BHG	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES112		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES111		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES110		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES109		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES108		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES107		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES106		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES103		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES102		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES101		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES100		BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	99	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	98	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	97	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	96	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	95	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	94	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	93	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	92	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	91	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	90	BHF	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	89	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	88	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	87	BHF	1	0	0	0	5	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	86	WTB	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	85	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	84	WTB	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	83	WTB	0	0	0	0	1	0	3	0	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	82	WTB	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	79	WTB	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	78	WTB	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	77	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	76	WTB	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	75	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	74	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	73	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	72	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	71	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	70	WTB	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	69	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	68	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	67	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	66	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2

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LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKCD	GRND	NOTCH	GROV	MINE	STRUCT	SHCAT	DUMP	RESID	CONST	WATER
SES	65	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	64	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	63	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	62	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	61	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	60	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	59	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	58	WTB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	57	WTB	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	54	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	53	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	52	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	51	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	50	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	49	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	48	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	47	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	46	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	45	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	44	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	43	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	42	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	41	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	40	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	39	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	38	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	37	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	36	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	35	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SES	34	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	33	WTB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	32	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	29	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	28	WTB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	27	WTB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	26	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	2	2
SES	25	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	24	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	23	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	22	WTB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	2	2
SES	21	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	20	WTB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	19	WTB	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	18	WTB	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	1	0	1	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	17	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	16	WTB	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	15	WTB	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	14	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	13	WTB	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	12	WTB	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	11	WTB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2

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LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
SES	10	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	9	WTB	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	8	WTB	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	7	WTB	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	6	WTB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	5	WTB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	4	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	3	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SES	2	WTB	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	2	1	1	2	2
SES	1	WTB	0	0	0	0	3	0	1	0	0	0	0	0	1	0	0	1	2	3	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	2	2
SEN	0	WTB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	1	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SEN	2	WTB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	2	2
SEN	3	BHF	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SEN	4	BHF	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	3	1	2	0	0	0	0	1	1	0	4	0	1	0	1	0	0	0	0	0	1	1	1	1	1	2	2
SEN	5	BHF	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	6	BHF	2	1	0	0	6	0	0	0	0	1	0	0	0	0	0	0	3	0	2	0	0	1	3	2	1	0	8	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	7	BHF	0	0	0	0	6	0	0	0	0	3	0	0	0	0	0	0	3	0	2	1	0	0	1	0	0	2	7	3	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	8	BHF	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	3	0	0	2	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	9	BHF	0	0	0	0	4	0	2	0	0	4	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	10	BHF	0	0	0	0	2	0	2	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	2	2
SEN	11	BHF	0	0	0	0	3	0	1	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	12	BHF	1	0	0	0	4	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	13	BHF	0	0	0	0	3	0	2	0	0	2	0	0	0	0	0	0	1	0	2	0	2	0	0	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	14	BHF	1	0	0	0	4	0	1	0	0	1	0	0	0	0	0	0	1	0	2	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	15	BHF	0	0	0	0	5	0	1	0	0	2	0	0	0	0	0	0	0	0	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	16	BHF	0	0	0	0	4	0	2	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	17	BHF	0	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	18	BHF	0	0	0	0	4	0	2	0	0	3	0	0	0	0	0	2	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	19	BHF	1	0	0	0	5	0	1	0	0	4	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	20	BHF	0	0	0	0	4	0	2	0	0	2	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	24	BHF	0	0	0	0	5	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	25	BHF	0	0	0	0	5	0	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SEN	26	BHF	0	0	0	0	3	0	2	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SEN	27	BHF	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	28	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	29	BHF	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	30	BHF	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	31	BHF	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SEN	32	BHF	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SEN	33	BHF	1	0	0	0	6	0	3	0	0	3	0	0	0	0	0	1	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	2	2
SEN	34	BHF	1	0	0	0	6	0	2	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	35	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SEN	36	BHF	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SEN	37	BHF	0	0	0	0	4	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	38	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	39	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	40	BHF	0	0	0	0	4	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	41	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	42	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	43	BHF	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2

INVENTORY LIST - EAST SHORE PAGE 7

LOC	BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFCR	DFCR	HFCR	SSHH	BSSH	SCSH	SCBO	ALGN	PILE	DPRSS	HSP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
SEN	44	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	45	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	46	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	47	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	48	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	49	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	50	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	52	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	53	BHF	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	54	BHF	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	55	BHF	2	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	56	BHF	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	57	BHF	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	58	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	59	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	60	BHF	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	61	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	62	BHF	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	63	BHF	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	64	BHF	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	2	2
SEN	65	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	66	BHF	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	67	BHF	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	68	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	69	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	70	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	71	BHF	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	76	BHF	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	77	BHF	0	0	0	0	3	0	3	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	78	BHF	0	0	0	0	4	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	79	BHF	0	0	0	0	3	0	4	0	0	4	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	80	BHF	0	0	0	0	2	0	3	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	81	BHF	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	82	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	83	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SEN	84	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	85	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	86	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	86	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	88	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	89	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	90	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	91	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	92	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	93	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	94	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SEN	95	WTB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2

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LOC BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	CSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	RMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
SWS282	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS281	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS280	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS279	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS278	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS277	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS276	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS275	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS274	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	2	2	1
SWS273	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS272	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS271	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS270	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS269	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS268	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS267	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS266	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS265	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS264	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS263	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS262	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	2	1	2	2	1
SWS257	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS256	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS255	BHF	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2	1	1	1	2	2	1
SWS254	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2	1	6	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS253	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	2	2	1
SWS252	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2	1	2	2	1
SWS251	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS250	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS249	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS248	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS247	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS246	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	2	2	1
SWS245	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS244	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS243	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS242	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS241	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS240	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS239	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS238	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS237	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS236	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS235	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS234	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS233	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS232	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS231	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS230	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS229	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS228	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1

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LOC BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEMM	NEMM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	SHCAT	DUMP	RESID	CONST	WATER
SWS227	BHG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS226	BHG	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS225	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS219	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS218	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
SWS217	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
SWS216	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
SWS215	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1
SWS214	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS213	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS212	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS211	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	1
SWS210	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWS209	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS208	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWS207	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	1
SWS206	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	1
SWS205	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
SWS204	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
SWS203	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
SWS202	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS201	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS200	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS199	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS198	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS197	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS196	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS195	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS194	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS193	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS192	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS191	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS190	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS189	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS188	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS187	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS186	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS185	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS184	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS183	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS182	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS181	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS180	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS179	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS178	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	1	2
SWS177	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	2	1	2
SWS173	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	2
SWS172	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	1	2
SWS171	BSD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS170	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS169	BSD	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2

LOC BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
SWS168	BSD	2	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	6	0	4	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	1	2
SWS167	BSD	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS166	BSD	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	1	3	0	4	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS165	BSD	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS164	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS163	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS162	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS161	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS160	BHF	0	0	0	0	1	0	2	0	0	1	1	0	0	0	0	1	3	0	4	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS159	BHF	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS158	BHF	0	0	0	0	1	0	2	0	0	2	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	2	2
SWS157	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS156	BHF	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	2	2
SWS155	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS154	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS153	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	1	1	2
SWS152	BHF	3	0	0	0	4	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	2
SWS151	BHF	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS150	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS149	BHF	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	2	1	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS148	BHF	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS147	BHF	0	1	0	0	3	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS146	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS145	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS144	BHF	1	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS143	BHF	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS142	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS141	BHF	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS140	BHF	0	0	0	0	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	2
SWS139	BHF	0	1	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SWS138	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS137	BHF	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS136	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	2	2
SWS135	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS132	BHF	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS131	BHF	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	2
SWS130	BHF	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS129	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	2	2
SWS128	BHF	0	0	0	0	3	0	3	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS127	BHF	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SWS126	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	2	2
SWS125	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	2	2
SWS124	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	2	2
SWS123	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS122	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	2	2
SWS121	BHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	2	2	2
SWS120	BHF	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	2	2	2
SWS119	BHF	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
SWS118	BHF	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS117	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	2
SWS116	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	2

INVENTORY LIST - WEST SHORE PAGE 4

LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSP	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEMM	NEMM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	CROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
SWS	115	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS	114	BHF	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	2
SWS	113	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
SWS	112	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	2	2
SWS	111	BHF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SWS	110	BHF	0	0	0	0	2	0	1	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	2	2
SWS	109	BHF	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	2
SWS	108	BHF	1	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	1	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	2	2	2	1	1	2	2
SWS	107	BHF	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	1	0	0	3	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS	106	BHF	0	1	0	0	4	0	3	0	0	0	0	0	0	0	0	0	1	0	5	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS	105	BHF	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	2	0	0	6	0	1	0	4	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	2
SWS	104	BHF	0	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	3	2	2	0	0	0	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS	103	BHF	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	1	2	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS	102	BHF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2	1	2	1	1	1	2
SWS	101	BHF	1	0	0	2	4	0	2	0	0	2	0	0	0	0	0	2	1	0	0	0	0	0	5	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	1	1	2	1	1	1	2
SWS	100	BHF	0	0	0	0	2	0	2	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	2	1	1	2	2
SWS	99	BHF	1	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	2
SWS	98	BHF	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS	97	BHF	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	2
SWS	96	BHF	2	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS	95	BHF	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS	94	BHF	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	2
SWS	93	BHF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	1
SWS	92	BHF	0	0	0	0	5	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	1	0	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	91	BHF	1	0	6	0	5	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2	1	2	1	1	1	1
SWS	90	BHF	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	89	BHF	0	0	0	0	4	0	3	0	0	2	2	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	2	1	2	1	1	1	1
SWS	88	BHF	0	0	0	0	5	0	3	0	0	2	0	0	0	0	0	0	1	1	1	0	2	1	1	0	0	1	0	3	2	0	0	0	0	0	1	0	0	0	2	1	1	1	1	1	1
SWS	87	BHF	0	0	0	0	4	0	3	0	0	2	2	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2	1	2	1	1	1	1
SWS	86	BHF	0	0	0	0	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	85	BHF	0	0	0	0	4	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	84	BHF	0	0	0	1	1	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	1
SWS	83	BHF	0	0	0	1	4	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	82	BSD	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1
SWS	81	BSD	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWS	80	BSD	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1
SWS	79	BSD	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	78	BSD	0	0	0	0	5	4	0	0	0	5	0	0	0	0	0	2	1	0	1	0	0	0	0	0	0	2	0	3	0	1	0	0	0	1	2	0	0	0	2	1	1	1	1	1	1
SWS	77	BSD	1	0	0	0	4	4	0	0	0	2	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	76	BSD	0	0	1	0	3	3	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	75	BSD	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWS	74	BSD	1	0	0	0	3	4	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	1	0	1	0	0	0	0	2	0	0	0	2	1	2	1	1	1	1
SWS	73	BSD	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	72	BSD	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	2	1	1	1	1
SWS	71	BSD	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	70	BSD	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	1
SWS	68	BSD	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	1	2	1	1	1	1
SWS	67	BSD	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	1
SWS	66	BSD	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	2	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	63	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	2	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	62	BSD	0	0	0	0	5	1	0	0	0	0	1	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1

INVENTORY LIST - WEST SHORE PAGE 5

LOC	BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFCR	DFCR	HFCR	SSHH	BSSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	SHCAT	DUMP	RESID	CONST	WATER
SWS	61	BSD	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWS	60	BSD	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWS	59	BSD	1	1	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	1	2	1	1	1
SWS	58	BSD	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	57	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	56	BSD	1	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	54	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	53	BSD	0	0	0	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	52	BSD	0	0	0	0	4	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	51	BSD	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
SWS	50	BSD	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	1
SWS	49	BSD	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	48	BSD	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	47	BSD	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	46	BSD	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2	1	2	1	1	1	1
SWS	45	BHF	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2	1	1	1	1	1	1
SWS	44	BHF	0	0	0	0	3	0	2	2	2	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	1
SWS	42	BHF	0	0	0	0	4	0	4	0	1	3	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	1	2	1	1	1	1
SWS	41	BHF	0	0	0	0	5	0	4	0	0	2	0	0	0	3	0	0	0	1	0	0	0	0	1	0	0	1	2	2	1	0	0	0	0	1	4	0	0	0	2	1	2	1	1	1	1
SWS	40	BHF	1	0	0	0	2	0	2	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	2	1	0	0	1	0	0	2	0	0	0	2	1	1	1	1	1	1
SWS	39	BHF	3	0	0	0	5	0	3	0	0	0	1	0	0	1	0	0	2	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	38	BHF	0	0	0	0	5	0	3	0	0	0	1	0	0	0	2	0	1	0	0	10	0	0	1	0	0	2	0	2	0	0	1	0	0	1	0	0	0	0	2	1	1	1	1	1	1
SWS	37	BHF	0	0	0	0	4	0	4	0	1	2	1	0	0	0	0	1	2	0	0	0	2	0	2	0	1	1	2	4	0	0	0	0	1	0	1	0	0	0	2	1	1	1	1	1	1
SWS	36	BHF	0	0	0	0	4	0	4	0	0	3	1	0	0	0	1	0	1	0	1	0	0	1	1	0	1	4	2	5	1	2	0	0	0	0	1	0	0	0	2	1	2	1	1	1	1
SWS	35	BHF	1	0	0	0	5	0	4	0	0	2	0	0	0	0	0	0	2	1	1	0	0	1	1	0	0	0	1	5	0	0	0	0	0	1	0	0	0	0	1	1	2	1	1	1	1
SWS	34	BHF	0	0	0	0	4	0	3	0	0	1	0	0	0	0	0	0	3	0	2	0	0	1	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	33	BHF	1	0	0	0	4	0	2	0	0	1	0	0	0	0	0	0	3	0	2	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	32	BHF	1	0	0	0	4	0	2	0	0	2	1	0	0	0	0	0	1	0	3	0	3	0	0	0	2	0	1	6	1	1	0	0	0	0	0	0	0	1	2	1	1	1	1	1	1
SWS	31	BHF	1	0	0	0	4	0	1	0	0	2	0	0	0	0	0	1	8	0	6	0	5	1	1	0	4	1	6	9	3	2	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWS	30	BHF	5	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	2	1	4	0	1	0	3	1	0	1	0	4	0	1	0	0	0	1	0	0	0	0	2	1	1	1	1	1	1
SWS	29	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	28	BSD	0	0	0	0	5	6	0	0	0	2	2	0	0	0	0	1	6	0	3	0	1	1	0	0	2	2	0	7	0	0	0	0	0	2	0	0	0	0	2	1	1	1	1	1	1
SWS	27	BSD	1	0	0	0	5	6	0	0	0	2	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	1	2	10	0	0	0	0	0	0	1	0	0	0	2	1	1	1	1	1	1
SWS	26	BSD	0	0	0	0	5	5	0	0	0	2	0	0	0	0	0	0	2	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	25	BSD	1	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	24	BHF	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	23	BHF	1	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	1
SWS	22	BHF	0	0	0	0	3	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	1	1	1	1	1
SWS	19	BHF	1	0	0	0	5	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	18	BHF	1	0	0	0	5	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	17	BHF	2	0	0	1	3	0	3	0	0	3	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	2	1	1	1	1	1	1
SWS	16	BHF	0	0	0	0	3	0	3	0	0	2	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	0	1	4	0	0	0	0	0	0	1	0	0	0	2	1	1	1	1	1	1
SWS	15	BSD	0	0	0	0	3	3	0	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	14	BSD	1	0	0	0	4	3	0	0	0	3	2	0	0	0	0	1	3	1	2	1	0	4	1	0	1	2	31	7	0	1	1	0	0	2	2	0	0	0	2	1	1	1	1	1	1
SWS	13	BSD	0	0	0	0	4	3	0	0	0	2	2	0	0	0	0	0	1	0	2	0	1	0	1	0	0	1	1	3	0	0	0	0	0	2	1	0	0	0	2	1	2	1	1	1	1
SWS	12	BSD	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	2	1	2	1	2	1
SWS	11	BSD	5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	2	1	1	1	2	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	10	BHF	1	0	0	0	5	0	0	0	0	2	1	2	0	0	0	2	4	0	3	1	3	0	0	0	0	2	5	5	1	0	0	0	0	1	0	0	0	0	2	1	1	1	1	1	1
SWS	9	BHF	0	0	0	0	5	0	4	0	0	3	3	5	0	0	0	0	2	0	1	1	2	0	1	0	1	1	5	3	0	1	1	0	0	4	1	1	0	0	2	1	1	1	1	1	1
SWS	8	BHF	0	0	0	0	6	0	2	0	0	3	0	6	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	7	BHF	1	1	0	0	4	0	2	0	0	2	0	9	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	1	1	1	1	1

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LOC	BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFCR	DFCR	HFCR	SSH	BSH	CSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEMM	NEMM	CBIF	NBIF	PIPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
SWS	6	BHF	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWS	5	BHF	2	2	0	0	5	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	4	BHF	0	1	0	0	5	0	0	0	0	2	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWS	3	BHF	0	0	0	0	5	0	0	0	0	2	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWS	2	BHF	0	0	0	0	5	0	0	0	0	2	0	0	0	0	0	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1
SWS	1	BHF	0	0	0	0	6	0	0	0	1	0	0	4	0	0	0	3	1	0	1	0	0	0	0	1	0	3	0	4	0	0	0	0	0	1	2	0	0	0	2	1	1	1	1	1	1
SWN	0	BHF	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1	2	1
SWN	1	BHF	1	0	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2	1	1	1	1	2	1
SWN	2	BSD	0	3	0	0	6	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	2	1	1	1	1	2	1
SWN	3	BSD	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	1	1	1	1	2	1
SWN	4	BSD	0	0	0	0	6	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	2	1
SWN	5	BSD	0	0	0	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	1
SWN	6	BSD	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	2	1
SWN	8	BSD	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
SWN	9	BSD	0	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
SWN	10	BSD	0	0	0	0	5	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
SWN	11	BSD	1	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
SWN	12	BSD	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	13	BSD	1	1	0	0	5	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	14	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	15	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	2	1	0	2	0	1	0	1	0	0	3	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	16	BSD	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5	4	0	4	1	3	0	0	0	0	6	0	1	0	0	0	0	0	1	0	0	0	0	2	1	1	1	1	1	1
SWN	17	BSD	1	0	0	0	5	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	18	BSD	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	19	BSD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	20	BSD	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	21	BSD	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	22	BSD	3	1	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	23	BSD	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	24	BSD	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	25	BSD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	26	BSD	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	27	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	28	BSD	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	29	BSD	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	30	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	31	BSD	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	32	BSD	0	1	0	0	4	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	33	BSD	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	34	BSD	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	35	BSD	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	36	BSD	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	37	BSD	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
SWN	38	BSD	1	0	0	0	3	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	39	BSD	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	2	1	1	1	1	1	1
SWN	40	BSD	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	2	0	2	0	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	1
SWN	41	BSD	1	1	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	1	0	1	0	1	0	0	0	2	0	0	0	0	2	1	2	1	1	1	1
SWN	42	BSD	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
SWN	43	BSD	1	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
SWN	44	BSD	2	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	1	1	1	1
SWN	45	BSD	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1

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LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRS	SHP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CLEM	NEEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
SWN	46	BSD	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
SWN	47	BSD	0	0	0	0	2	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	49	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	50	BSD	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	51	BHF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	1	1	1
SWN	52	BHF	4	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	2	1	1	1	1
SWN	53	BHF	1	0	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1
SWN	54	BHF	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	55	BHF	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	56	BSD	2	1	0	0	4	1	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	2	1	1	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
SWN	57	BSD	4	1	0	0	5	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2	0	0	0	1	0	0	0	0	1	0	0	0	0	1	1	2	1	1	1	1
SWN	58	BSD	1	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1
SWN	59	BSD	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	60	BSD	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	61	BSD	2	0	0	0	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	1
SWN	62	BSD	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	63	BSD	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
SWN	64	BSD	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1
SWN	65	BSD	0	0	0	0	3	2	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	1	2	1	1	1	1
SWN	67	BSD	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	1
SWN	68	BSD	0	0	0	0	2	2	0	0	0	2	0	0	2	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	69	BSD	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	70	BSD	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	1
SWN	71	BSD	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	0	0	0	0	0	1	0	0	0	1	0	1	3	1	0	1	0	0	0	0	0	1	1	1	1	1	2	1
SWN	72	BSD	4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	1	0	1	0	0	1	2	2	0	0	0	0	0	2	1	0	0	0	1	1	1	2	1	1	1
SWN	73	BSD	1	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	0	1	1	1	1	1	1	1
SWN	74	BSD	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	75	BSD	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	76	BSD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	77	BSD	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	78	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	2	1	1	1
SWN	79	BSD	6	0	0	0	5	0	0	0	0	0	0	1	0	0	0	0	7	0	6	0	1	1	3	0	0	1	6	30	0	1	0	0	0	1	0	0	2	0	1	1	1	1	1	1	1
SWN	80	BSD	3	0	0	0	6	0	0	0	0	0	0	0	0	0	0	3	4	0	4	0	3	0	2	0	2	2	1	6	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
SWN	81	BSD	4	1	0	0	6	0	0	0	0	0	0	0	0	0	0	6	12	6	8	4	8	2	6	2	2	3	6	30	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
SWN	82	BSD	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	3	10	3	5	2	7	1	3	1	1	3	4	20	0	1	0	0	0	0	0	0	0	0	2	1	1	1	1	2	1
SWN	83	BSD	1	0	0	0	4	2	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	2	1	2	1	1	1	1
SWN	84	BSD	0	0	0	0	4	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	85	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	86	BSD	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	87	BSD	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
SWN	88	BSD	1	0	0	0	5	2	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0	2	1	1	1	1	1	1
SWN	89	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1	1	1	1	1	1
SWN	90	BSD	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	2	2	2	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	1	1	1	1	1
SWN	91	BSD	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	5	0	0	0	0	2	1	1	1	1	1	1
SWN	92	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	1	1	1	1	1
SWN	93	BSD	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	1	1	1	1	1
SWN	94	BSD	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1	1	1	1	1	1

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LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSP	SHP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKCD	GRND	NOTCH	GROV	MINE	STRUCT	HSCAT	DUMP	RESID	CONST	WATER
ITW	75	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	75	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	76	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	76	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	77	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	77	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	78	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	78	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	79	WBL	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	[illegible]	2
ITE	79	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	80	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	80	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	81	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	81	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	82	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	82	EBC	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	2
ITW	83	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	83	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	84	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	84	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	85	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	85	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	86	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	86	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	87	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	87	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	88	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	88	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	89	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	89	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	90	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	90	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITW	91	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
ITE	91	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2

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LOC	BLOCK	LAND	F1A	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKCD	GRND	NOTCH	CROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
IWW	0	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	0	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	1	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	1	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	2	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	2	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	3	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	3	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	4	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	4	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	5	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	5	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	6	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	6	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	7	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	7	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	8	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	8	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	9	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	9	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	10	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	10	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	11	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	11	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	12	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	12	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	13	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	13	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	14	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	14	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	15	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	15	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	16	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	16	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	17	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	17	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	18	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	18	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	19	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	19	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	20	BLF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	20	BLF	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	2
IWW	21	BLF	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	21	BLF	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	22	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	22	EBC	0	0	0	0	6	0	3	0	0	2	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	2
IWW	23	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	23	EBC	0	0	0	0	0	0	3	0	0	0	0	0	0	7	0	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	24	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	24	EBC	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2

INVENTORY LIST - WOODED ISLAND PAGE 2

LOC	BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PIPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUCT	HSCAT	DUMP	RESID	CONST	WATER
IWW	25	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	25	EBC	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	1	1	2
IWW	26	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	26	EBC	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	27	WBL	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	27	EBC	1	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	28	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	28	EBC	0	0	0	0	0	0	3	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	29	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	29	EBC	0	0	0	0	5	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	2
IWW	30	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	30	EBC	0	0	0	0	5	0	2	0	0	0	0	0	0	2	0	0	3	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	2
IWW	31	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	31	EBC	0	0	0	0	5	0	2	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	32	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	32	EBC	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	33	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	33	EBC	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	34	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	34	EBC	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	35	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	35	EBC	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	2
IWW	36	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	36	EBC	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	37	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	37	EBC	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	38	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	38	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	39	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	39	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	40	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	40	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	41	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	41	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	42	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	42	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	43	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	43	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	44	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	44	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	45	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	45	BLF	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	46	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	46	BLF	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	47	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	47	BLF	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	48	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	48	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	49	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	49	BLF	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2

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LOC	BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFCR	DFCR	HFCR	SSH	RSH	SCSH	SCBO	ALGN	PILE	DPRS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
IWW	50	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	50	BLF	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	51	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	51	BLF	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	52	BLF	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	52	BLF	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	53	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	53	BLF	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	2
IWW	54	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	54	BLF	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	55	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	55	BLF	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	56	WBL	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	56	EBC	2	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	61	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	61	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	62	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	62	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	63	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	63	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	64	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	64	EBC	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	65	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	65	EBC	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	66	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	66	EBC	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	2
IWW	67	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	67	EBC	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	68	WBL	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	68	EBC	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	69	WBL	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	2
IWE	69	EBC	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	70	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	70	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	71	BLF	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	71	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	72	BLF	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	72	BLF	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	73	BLF	1	1	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	73	BLF	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	74	BLF	1	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	74	BLF	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	75	BLF	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	75	BLF	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	76	BLF	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	76	BLF	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	2
IWW	77	BLF	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	77	BLF	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	78	BLF	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	78	BLF	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2

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LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
IWW	79	BLF	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	79	BLF	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	80	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	80	BLF	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	81	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	81	BLF	0	0	0	0	1	0	0	0	0	2	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWW	82	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IWE	82	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2

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LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HSP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CLEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
IAW	0	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	0	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	1	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	1	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	2	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	2	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	3	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	3	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	4	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	4	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	5	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	5	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	6	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	6	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	7	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	7	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	8	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	8	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	9	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1		1	1	1
IAE	9	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			1	1	1
IAW	10	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			1	1	1
IAE	10	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	11	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	11	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	12	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	12	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	13	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	13	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	14	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	14	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAW	15	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	15	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1
IAW	16	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IAE	16	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

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LOC	BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSP	HSP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
IBW	0	BLF	0	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	1	12	0	0	1	0	0	0	2	2	2	0	0	1	1	1	1	1	1	1
IBE	0	BLF	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	3	4	0	0	0	2	0	0	1	0	1	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
IBW	1	WBL	2	8	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	2	0	2	2	0	0	0	0	2	0	0	0	0	1	1	1	1	1	1	1
IBE	1	EBC	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	4	1	0	0	0	1	1	1	1	1	1	1
IBW	2	WBL	1	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	0	0	0	1	1	1	1	1	1	1
IBE	2	EBC	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	1
IBW	3	WBL	5	2	0	0	4	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
IBE	3	EBC	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	1	1	1	1	1	1	1
IBW	4	WBL	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	4	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	5	WBL	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	5	EBC	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
IBW	6	WBL	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	1
IBE	6	EBC	0	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	7	WBL	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	7	EBC	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	3	3	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	8	WBL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	8	EBC	0	8	0	0	4	0	0	0	0	0	1	0	0	0	0	2	12	1	1	0	4	0	1	0	0	1	0	2	0	3	0	0	0	5	2	0	0	0	1	1	1	1	1	1	1
IBW	9	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	9	EBC	0	3	0	0	4	0	0	0	0	0	0	0	0	0	0	5	23	0	4	0	8	0	3	0	0	3	0	5	0	0	0	0	0	9	4	0	0	0	1	1	1	1	1	1	1
IBW	10	WBL	0	0	0	0	1	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	10	EBC	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	2	20	2	0	0	7	0	1	0	0	1	0	2	1	0	0	0	0	9	4	0	0	0	1	1	1	1	1	1	1
IBW	11	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	11	EBC	0	1	0	0	4	0	0	0	0	0	0	0	0	2	0	1	15	0	1	0	0	0	2	0	1	1	0	3	0	0	1	0	1	9	2	0	1	0	1	1	1	1	1	1	1
IBW	12	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	12	EBC	0	9	0	0	4	0	0	0	0	0	0	0	0	1	0	2	13	0	1	0	5	0	1	0	0	1	0	1	0	0	0	0	0	7	1	0	0	0	1	1	1	1	1	1	1
IBW	13	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	13	EBC	0	6	1	0	4	0	0	0	0	0	0	0	1	0	0	1	15	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	9	1	0	0	0	1	1	1	1	1	1	1
IBW	14	WBL	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	14	EBC	0	1	1	0	6	0	0	0	0	0	0	0	0	0	1	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	2	1	1	1	1	1	1	1
IBW	15	WBL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	15	EBC	0	0	0	1	6	0	0	0	0	1	0	0	0	0	0	0	15	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	1	1	1	1	1	1	1
IBW	16	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	16	EBC	0	6	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	17	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	17	BLF	0	2	0	0	6	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	1	1	1	1	1	1	1
IBW	18	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	18	BLF	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	2	2	0	2	0	0	0	0	0	0	0	2	4	0	0	0	1	0	1	0	0	0	0	1	1	1	1	1	1	1
IBW	19	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	19	BLF	3	3	1	0	3	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	1	1	1	1	1	1	1
IBW	20	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	20	BLF	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IBW	21	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	21	BLF	4	2	0	0	2	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	22	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	22	BLF	1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	23	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	23	BLF	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IBW	24	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

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LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
IBE	24	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IBW	25	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	25	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	26	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	26	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IBW	27	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	27	BLF	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	28	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	28	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IBW	29	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
IBE	29	BLF	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	30	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	30	BLF	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IBW	31	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	31	BLF	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	32	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	32	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	33	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	33	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	34	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	34	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	35	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	35	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	36	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	36	BLF	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	37	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	37	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	38	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	38	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	39	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	39	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	40	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	40	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	41	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	41	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	42	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	42	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBW	43	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IBE	43	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

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LOC	BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
ICW	0	BLF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
ICE	0	BLF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	1
ICW	1	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	1	1	1	1	1	1
ICE	1	BLF	1	0	0	0	2	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
ICW	2	BLF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	2	BLF	0	0	0	0	2	0	0	0	0	0	0	1	2	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	3	WBL	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	3	EBC	1	0	0	0	2	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	1	1	1	1	1	1	1
ICW	4	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	4	EBC	0	0	0	0	1	0	2	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	1	0	1	0	1	1	1	1	1	1	1
ICW	5	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	5	EBC	0	1	0	0	2	0	6	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	6	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	6	EBC	1	2	0	0	1	0	6	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	5	0	0	0	0	1	1	1	1	1	1	1
ICW	7	WBL	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	7	EBC	1	3	0	0	1	0	6	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	1	1	1	1	1	1	1
ICW	8	WBL	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	8	EBC	0	0	0	0	1	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
ICW	9	WBL	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	9	EBC	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	1	1	1	1	1	2	1
ICW	10	WBL	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	10	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	11	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	11	EBC	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	12	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	12	EBC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	13	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
ICE	13	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
ICW	14	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	14	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
ICW	15	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	15	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	16	BLF	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	16	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	17	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	17	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	18	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	18	BLF	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	19	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	19	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	20	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	20	BLF	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	21	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	21	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	22	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	22	BLF	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	23	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	23	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	24	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	24	BLF	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

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LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSSH	SCSH	SCBO	ALGN	PILE	DPRSS	HSP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKCD	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
ICW	25	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	25	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	26	BLF	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	26	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	27	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	27	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	28	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	28	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	29	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	29	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	30	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	30	BLF	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	31	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	31	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	32	BLF	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	32	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	33	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	33	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	34	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	34	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	35	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	35	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	36	BLF	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	36	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	37	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	37	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	38	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	38	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	39	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	39	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	40	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	40	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	41	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	41	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	42	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	42	BLF	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	43	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	43	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	44	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	44	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	45	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	45	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	46	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	46	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICW	47	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
ICE	47	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

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LOC	BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
IDW	0	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	0	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	1	BLF	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	1	BLF	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IDW	2	WBL	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	2	EBC	0	0	0	0	2	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	3	WBL	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IDE	3	EBC	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	4	WBL	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	4	EBC	1	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IDW	5	WBL	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	5	EBC	0	1	1	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	6	WBL	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	6	EBC	1	2	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	1	1	1	1	1	1
IDW	7	BLF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	7	BLF	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	1	1	1	1	1	1
IDW	8	BLF	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	8	BLF	1	1	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	9	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	9	BLF	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	3	4	1	0	0	2	0	1	0	0	1	0	4	0	0	0	0	0	5	0	0	0	0	1	1	1	1	1	1	1
IDW	10	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	10	BLF	4	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	11	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	11	BLF	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	12	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IDE	12	BLF	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	13	BLF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	13	BLF	2	1	0	0	5	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1
IDW	14	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IDE	14	BLF	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	15	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	15	BLF	0	0	0	0	4	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	1	1	1	1	1	1
IDW	16	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	16	BLF	1	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	1	1	1	1	1	1	1
IDW	17	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	17	BLF	1	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	18	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	18	BLF	0	0	1	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	19	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	19	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	20	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	20	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	21	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	21	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	22	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	22	BLF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	23	BLF	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IDE	23	BLF	0	3	0	0	5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	1	1	1	1	1	1
IDW	24	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	24	BLF	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	4	0	2	0	0	0	2	0	0	0	0	1	1	1	1	1	1	1

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LOC	BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
IDW	25	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	25	BLF	1	0	0	0	5	0	0	0	0	0	0	0	2	0	0	2	4	3	1	0	2	0	0	0	9	6	99	25	0	1	0	0	0	3	1	0	0	0	1	1	1	1	1	1	1
IDW	26	BLF	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	26	BLF	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	1	0	1	0	0	0	0	0	0	0	99	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	27	WBL	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	27	EBC	0	3	0	2	4	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	28	WBL	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	28	EBC	0	4	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	1	1	1	1	1	1	1
IDW	29	WBL	3	5	1	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	4	2	0	0	0	1	1	1	1	1	1	1
IDE	29	EBC	0	3	3	4	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	1	1	1	1	1	1	1
IDW	30	WBL	0	5	1	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
IDE	30	EBC	1	1	3	4	5	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
IDW	31	WBL	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1
IDE	31	EBC	0	3	1	3	3	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IDW	32	WBL	0	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	32	EBC	2	1	1	1	6	0	0	0	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	33	WBL	0	3	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IDE	33	EBC	0	4	3	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
IDW	34	WBL	3	3	3	0	5	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	3	2	0	1	0	1	0	1	0	0	0	0	0	2	3	0	0	1	1	1	2	1	1	1	1
IDE	34	EBC	0	1	5	0	6	0	0	0	0	0	0	0	0	0	0	1	4	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	1	1	1	1	1	2	1
IDW	35	WBL	0	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0	4	1	0	1	1	1	1	0	0	2	0	1	0	0	0	0	0	4	1	0	0	0	1	1	1	1	1	1	1
IDE	35	EBC	1	0	0	0	5	0	0	0	0	1	0	0	0	0	0	1	1	2	0	0	1	0	2	0	0	1	0	0	0	0	0	0	0	3	5	0	0	1	1	1	1	1	1	2	1
IDW	36	WBL	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	36	EBC	0	5	4	0	5	0	5	1	0	1	0	0	0	0	0	2	8	1	0	0	3	1	0	0	0	9	0	4	0	0	0	0	0	9	4	0	2	0	1	1	2	1	1	1	1
IDW	37	WBL	0	3	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	37	EBC	0	3	5	0	5	0	0	0	0	5	0	0	4	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	3	1	0	0	0	1	1	1	1	1	1	1
IDW	38	BLF	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	38	BLF	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	39	BLF	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	39	BLF	0	1	0	0	3	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	40	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	40	BLF	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IDW	41	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	41	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IDW	42	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	42	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	43	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	43	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	44	BLF	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	44	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	45	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	45	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	46	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	46	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	47	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	47	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	48	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	48	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	49	BLF	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	49	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

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LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
IDW	50	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	50	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	51	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	51	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	52	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	52	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	53	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	53	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	54	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	54	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	55	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDE	55	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IDW	56	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IDE	56	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IDW	57	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2
IDE	57	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2

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LOC	BLOCK	LAND	FTA	FTB	FTC	FTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEMM	NEMM	CBIFF	NBIFF	PPT	BTC	PKCD	GRND	NOTCH	GROV	MINE	STRUCT	HSCAT	DUMP	RESID	CONST	WATER
IEW	0	BLF	1	0	0	0	5	0	0	0	0	0	4	0	0	0	0	0	4	2	0	3	0	3	1	4	0	3	2	2	0	1	0	0	0	5	2	0	0	0	1	1	2	1	1	2	1
IEE	0	BLF	0	0	0	0	2	0	0	0	0	0	3	0	0	0	0	1	1	0	1	0	2	1	1	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	1	1	1	1	1	2	1
IEW	1	BLF	1	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
IEE	1	BLF	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	1	2	1
IEW	2	WBL	4	2	0	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
IEE	2	EBC	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	2	1
IEW	3	WBL	1	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	3	EBC	0	0	0	0	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	0	0	0	0	1	1	1	1	1	2	1
IEW	4	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	4	EBC	1	1	0	0	2	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	5	WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	5	EBC	0	0	0	0	2	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	2	1
IEW	6	BLF	3	0	0	0	4	0	0	0	0	0	0	0	3	0	0	1	1	2	0	0	2	1	0	1	0	0	0	0	0	1	0	0	0	3	1	0	0	0	1	1	1	1	1	1	1
IEE	6	BLF	1	1	0	0	4	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
IEW	7	BLF	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	7	BLF	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	8	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IEE	8	BLF	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	9	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	9	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	10	BLF	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	10	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
IEW	11	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	11	BLF	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	12	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	12	BLF	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	13	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	13	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	14	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	14	BLF	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	15	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	15	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	16	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	16	BLF	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	17	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	17	BLF	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	18	BL!	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	18	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEW	19	PLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
IEE	19	BLF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

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LOC	BLOCK	LAND	FTTA	FTTB	FTTC	FTTD	BFCR	DFCR	HFCR	SSH	BSH	SCSH	SCBO	ALGN	PILE	DPRSS	HSP	MFC	UES	UEB	UMS	UMB	BES	BEB	BMS	BMB	CCORE	NCORE	CFLK	NFLK	CEM	NEM	CBIF	NBIF	PPT	BTC	PKC	GRND	NOTCH	GROV	MINE	STRUC	HSCAT	DUMP	RESID	CONST	WATER
INW	0	BLF	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	0	BLF	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
INW	1	BLF	0	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	3	2	0	2	1	0	0	1	0	0	0	2	0	0	0	0	0	1	1	0	1	0	1	1	1	1	1	1	1
INE	1	BLF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INW	2	BLF	2	1	0	0	4	0	0	0	0	0	1	0	0	0	0	0	4	1	3	0	1	1	1	1	0	2	2	3	0	0	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1
INE	2	BLF	0	2	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2	1	1	1	1	1	1
INW	3	BLF	2	1	0	0	4	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	3	BLF	0	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	0	1	0	0	0	0	0	0	0	1	0	0	1	0	2	1	1	1	1	1	1
INW	4	BLF	1	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	1	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	4	BLF	0	2	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INW	5	BLF	1	1	0	0	5	0	0	0	0	0	0	0	0	0	0	1	3	0	1	0	0	0	3	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
INE	5	BLF	0	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INW	6	BLF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
INE	6	BLF	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1
INW	7	BLF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	2	2	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1
INE	7	BLF	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INW	8	BLF	0	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	10	1	2	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	8	BLF	0	1	0	0	5	0	0	0	0	0	0	0	1	0	0	0	0	4	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	1	1	1	1	1
INW	9	BLF	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	9	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	1
INE	9	BLF	0	1	0	0	5	0	0	0	0	0	0	0	1	0	0	1	2	1	2	0	0	2	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	1
INW	10	BLF	0	1	0	0	3	0	0	0	0	2	0	0	1	0	0	0	2	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	10	BLF	0	0	0	0	5	0	0	0	0	0	0	1	1	0	0	2	0	2	0	0	2	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1
INW	11	BLF	0	3	0	0	4	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
INE	11	BLF	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	2	0	3	1	0	0	0	2	0	0	0	0	0	2	1	0	0	0	1	1	1	1	1	1	1
INW	12	BLF	0	0	0	0	3	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	12	BLF	0	1	0	0	2	0	0	0	0	3	0	0	1	0	0	0	3	1	2	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0	4	0	1	0	1	1	1	1	1	1	1
INW	13	BLF	0	0	0	0	3	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	13	BLF	0	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
INW	14	BLF	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	14	BLF	0	3	0	0	4	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
INW	15	BLF	0	0	0	0	3	0	0	0	0	4	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
INE	15	BLF	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INW	16	BLF	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1
INE	16	BLF	0	0	0	0	4	0	0	0	0	2	0	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
INW	17	BLF	0	1	0	0	3	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	17	BLF	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INW	18	BLF	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	18	BLF	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
INW	19	BLF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	19	BLF	0	1	0	0	4	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INW	20	BLF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	20	BLF	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INW	21	BLF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INE	21	BLF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INW	22	BLF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
INE	22	BLF	0	1	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INW	23	BLF	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1
INE	23	BLF	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

APPENDIX C

Type-Areas, Case Membership, and the Regrouped Data Set

KEY FOR APPENDIX C

Abbreviation	Descriptive Term
CLUS	Cluster
LOC	Location
BLOCK	50 m unit, numbered consecutively from 1
LAND	Landform
BLF	Island, beaches and low flat
BAF	Island, beaches and high alluvial flat
BHF	East or west shore, beach through high flat
BSD	West shore, beach through sand dune
BHG	East shore, beach through high gravel terrace
WTB	East shore, White bluffs, beach through slope
PSF	Pitstructure feature
NGS	Notched and grooved stone
SCBO	Bone, scattered
SCF	Shell feature or concentration
SCSH	Shell, scattered
RHF	Fire-cracked rock and hearth features
BFCR	Beach zone, FCR
DFCR	Dune zone, FCR
HFCR	High flat zone, FCR
PKC	Pecked cobble
BTC	Battered cobble
GRND	Ground stone
CMT	Chert, modified flakes and tools
NMT	Nonchert, modified flakes and tools
BCB	Bifacially flaked cobbles with battered edge(s)
UCB	Unifacially flaked cobbles with battered edge(s)
BCS	Bifacially flaked cobbles with sharp edges(s)
USC	Unifacially flaked cobbles with sharp edges(s)
CCORE	Chert core
CFLK	Chert flake
NCC	Nonchert cores and core-like types
NFLK	Nonchert flake

Values are as follows:
FCR item density (BFCR, DFCR, HFCR), SCBO, SCSH densities

0 absent
1 very, very low
2 very low
3 low
4 medium
5 high
6 very high

all other artifacts and features

0 to n number of occurrences per 50 m unit

PIT STRUCTURE AREA 1 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
IW	22	BAF	9	0	0.0	0	2.5	0	50.0	0.0	7.0	1	0	0	0	0	1	0	0	1	0	0	2	1

PIT STRUCTURE AREA 2 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
ES	280	BHF	2	1	14.5	0	7.0	4	14.5	0.0	0.0	0	0	0	0	0	0	1	0	0	0	0	0	2
IB	3	BAF	2	1	0.0	0	0.0	8	14.5	0.0	0.0	1	3	0	0	1	0	2	1	2	0	0	5	0
IB	5	BAF	2	0	0.0	1	0.0	4	14.5	0.0	0.0	2	1	0	0	0	0	1	0	0	0	0	0	3
IB	11	BAF	3	1	0.0	0	0.0	10	14.5	0.0	0.0	3	16	0	2	0	0	0	8	30	1	0	5	4
IW	24	BAF	2	0	0.0	0	0.0	0	0.0	0.0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	28	BAF	2	0	0.5	0	0.0	0	35.0	0.0	7.0	1	0	0	0	0	0	0	0	1	0	0	0	0
IW	30	BAF	2	0	0.0	0	0.0	0	35.0	0.0	2.5	1	0	0	0	0	0	0	2	4	0	0	6	1
WS	38	BHF	2	0	0.5	1	2.5	0	35.0	0.0	14.5	1	1	0	2	0	0	10	5	3	1	2	4	6
WS	42	BHF	3	0	0.5	1	7.0	0	35.0	0.0	14.5	4	1	0	1	1	0	1	1	1	0	2	2	2
WS	88	BHF	3	0	2.5	0	2.5	0	35.0	0.0	7.0	1	1	0	2	0	1	1	3	3	0	1	1	3
WS	90	BHF	2	0	2.5	0	2.5	2	35.0	0.0	7.0	1	0	0	1	0	0	0	1	0	0	0	1	1

PIT STRUCTURE AREA 3 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
ID	31	BAF	5	1	0.0	0	0.0	16	50.0	0.0	0.0	0	2	0	0	1	1	0	2	2	0	0	5	1
WS	45	BHF	6	0	0.0	4	0.0	0	7.0	0.0	2.5	0	1	0	0	0	0	0	0	0	0	1	1	0

PIT STRUCTURE AREA 4 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
IB	13	BAF	1	2	0.0	0	0.0	9	50.0	0.0	0.0	2	14	0	0	0	0	0	0	24	0	0	3	0
ID	27	BAF	1	0	0.0	0	0.0	11	14.5	0.0	7.0	0	2	0	0	0	1	0	1	1	0	1	1	2
IW	26	BAF	1	0	0.0	0	0.0	1	2.5	0.0	2.5	0	0	0	0	0	0	0	0	0	0	0	0	2
WS	36	BHF	1	0	0.5	0	7.0	1	35.0	0.0	14.5	1	1	0	1	2	2	1	2	5	1	3	4	10
WS	40	BHF	1	0	0.5	0	2.5	4	35.0	0.0	7.0	2	0	0	1	1	0	0	0	2	3	10	1	2
WS	152	BHF	1	0	0.0	0	0.0	4	14.5	0.0	0.5	0	0	0	0	0	0	0	1	1	0	0	2	0
WS	159	BHF	1	0	0.5	0	2.5	0	0.5	0.0	2.5	0	0	0	0	0	0	0	1	4	0	0	0	1

HIGH DENSITY AREA 1 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
ID	29	BAF	0	0	0.0	0	0.0	34	35.0	0.0	0.5	4	6	0	0	1	1	1	1	4	0	0	1	1
ID	33	BAF	0	3	0.0	0	0.0	28	50.0	0.0	0.0	4	4	0	0	0	5	0	4	9	0	0	3	2
ID	37	BAF	0	0	0.0	0	35.0	22	35.0	0.0	0.0	2	6	0	0	0	4	0	0	0	0	0	2	0

HIGH DENSITY AREA 2 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
IB	1	BAF	0	0	0.0	0	0.0	12	50.0	0.0	0.0	3	9	0	2	0	0	3	2	1	0	0	3	13
IB	7	BAF	0	0	0.5	0	0.0	9	14.5	0.0	0.0	2	5	0	1	3	0	1	5	16	6	3	6	5
IB	9	BAF	0	0	0.0	0	2.5	7	14.5	0.0	0.0	8	18	0	1	0	0	2	19	47	0	0	11	7
IB	15	BAF	0	0	0.0	0	0.5	7	50.0	0.0	0.0	1	9	0	0	0	0	1	10	15	0	0	1	0
IB	19	BLF	0	0	0.0	2	0.0	9	7.0	0.0	0.0	2	1	0	0	0	0	0	0	4	0	2	0	0
ID	35	BAF	0	3	0.0	1	0.5	16	35.0	0.0	35.0	10	16	0	0	0	2	5	8	13	0	0	15	5
IE	2	BAF	0	0	0.0	0	0.0	8	50.0	0.0	2.5	1	4	0	0	0	4	1	0	3	0	1	1	2
IN	2	BLF	0	2	0.5	1	0.0	9	35.0	0.0	0.0	1	2	0	0	0	9	2	3	9	0	3	5	3
IN	4	BLF	0	0	0.0	0	0.0	8	35.0	0.0	0.0	0	1	0	0	0	3	1	8	7	0	0	2	2
WN	56	BSD	0	0	0.0	0	2.5	8	35.0	0.5	0.0	0	2	0	1	0	1	0	3	2	2	1	2	1
WN	79	BSD	0	2	0.0	0	0.0	9	50.0	0.0	0.0	0	2	0	0	1	1	0	9	21	2	7	6	36
WN	81	BSD	0	0	0.0	0	0.0	8	50.0	0.0	0.0	0	0	0	0	2	6	15	24	35	3	10	15	50
WS	11	BSD	0	0	0.0	0	0.0	10	7.0	0.0	0.0	0	0	0	0	0	2	4	6	6	0	2	4	2
WS	30	BHF	0	0	0.0	0	0.0	10	14.5	0.0	0.5	0	2	0	0	2	2	2	8	12	0	0	2	8

HIGH DENSITY AREA 3 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
ID	25	BLF	0	0	0.0	0	0.0	3	35.0	0.0	0.0	1	3	0	0	1	0	4	2	7	9	198	8	25

HIGH DENSITY AREA 4 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
EN	5	BHF	0	0	0.0	0	0.5	3	50.0	0.0	0.0	0	0	0	0	0	3	0	3	10	1	14	1	2
EN	32	BHF	0	0	0.0	0	7.0	2	50.0	0.0	7.0	0	1	0	0	0	1	0	1	7	0	0	1	0
EN	54	BHF	0	0	0.0	0	0.0	3	50.0	0.0	0.0	0	0	0	0	0	0	0	0	3	0	0	0	0
IB	0	BLF	0	0	0.0	0	0.5	6	14.5	0.0	0.0	6	4	4	0	2	4	6	4	8	0	24	10	2

HIGH DENSITY AREA 4 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMMT	NMT	BCB	UCB	BCS	UCS	COCRE	CFLK	NCC	NFLK
IB	17	BLF	0	0	0.0	0	0.0	2	50.0	0.0	0.0	1	5	0	0	1	0	0	0	14	0	2	2	4
IB	21	BLF	0	0	0.0	2	0.0	7	2.5	0.0	0.0	0	0	0	0	0	0	0	0	2	0	0	7	2
IB	23	BLF	0	0	0.0	0	0.0	3	0.5	0.0	0.0	0	2	0	0	0	0	0	1	4	0	0	2	0
IC	5	BAF	0	0	0.0	0	0.5	4	2.5	0.0	50.0	0	5	0	0	0	0	1	0	0	1	0	2	0
IC	7	BAF	0	1	0.0	0	2.5	4	7.0	0.0	50.0	0	4	0	0	0	0	0	0	0	0	0	1	0
ID	4	BAF	0	0	0.0	0	0.0	5	7.0	0.0	0.0	0	1	0	0	0	1	0	1	2	0	0	0	0
ID	6	BAF	0	0	0.0	0	0.0	6	14.5	0.0	0.0	4	0	0	0	0	0	0	2	2	0	0	0	0
ID	7	BLF	0	0	0.0	0	0.0	7	14.5	0.0	0.0	1	2	0	0	0	1	0	2	0	0	0	0	0
ID	9	BLF	0	0	0.0	0	0.0	6	14.5	0.0	0.0	0	5	0	0	0	0	2	3	4	0	0	4	4
ID	13	BLF	0	1	0.0	0	7.0	5	35.0	0.0	0.0	0	2	0	0	0	0	1	0	0	0	0	0	0
ID	15	BLF	0	1	0.0	2	0.0	2	35.0	0.0	0.0	0	6	0	0	0	0	0	1	1	0	0	0	0
ID	17	BLF	0	0	0.0	0	7.0	3	35.0	0.0	0.0	0	0	0	0	0	0	0	2	0	1	0	0	1
ID	23	BLF	0	0	0.0	0	0.0	4	35.0	0.0	0.0	0	5	0	0	2	1	2	0	0	0	0	2	4
IE	0	BLF	0	0	14.5	0	0.0	4	35.0	0.0	0.0	2	8	0	0	2	10	6	4	6	0	2	4	3
IE	6	BLF	0	0	0.0	0	0.0	6	14.5	0.0	0.0	1	3	0	0	2	2	2	2	3	0	0	2	0
IN	0	BLF	0	1	0.0	0	0.0	6	35.0	0.0	0.0	1	1	0	0	0	3	5	1	5	0	0	0	2
IN	8	BLF	0	0	0.0	0	0.0	5	35.0	0.0	0.0	2	3	0	0	1	4	7	3	26	0	0	1	1
IN	10	BLF	0	0	0.0	0	2.5	4	35.0	0.0	0.0	1	3	0	0	0	3	5	8	10	0	0	4	3
IN	12	BLF	0	1	0.0	0	14.5	3	14.5	0.0	0.0	4	0	0	0	1	2	2	5	8	0	0	0	0
IN	14	BLF	0	0	0.0	0	14.5	4	14.5	0.0	0.0	0	1	0	0	0	0	1	3	1	0	0	0	0
IW	20	BLF	0	0	0.0	0	0.0	2	50.0	0.0	0.0	0	1	0	0	0	0	1	0	0	0	0	2	2
IW	56	BAF	0	0	0.0	0	7.0	3	0.0	0.0	7.0	0	0	0	0	0	0	0	0	1	0	1	1	0
WN	2	BSD	0	0	0.0	0	0.0	3	50.0	0.0	0.0	0	1	0	0	1	2	0	1	2	0	0	4	0
WN	6	BSD	0	0	0.0	0	0.0	4	14.5	2.5	0.0	0	0	0	0	0	0	0	1	1	0	0	0	0
WN	11	BSD	0	0	0.0	0	7.0	3	35.0	0.0	0.0	0	0	0	0	0	0	0	2	2	0	1	2	0
WN	13	BSD	0	0	0.0	0	2.5	2	35.0	0.0	0.0	0	0	0	0	0	0	0	1	2	0	0	0	0
WN	17	BSD	0	0	0.0	0	2.5	2	35.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	1	0
WN	21	BSD	0	0	0.0	0	0.5	4	2.5	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	0
WN	43	BSD	0	0	0.0	0	0.0	3	7.0	0.5	0.0	0	2	0	0	0	0	0	4	3	0	0	0	0
WN	51	BHF	0	0	0.0	0	0.0	5	7.0	0.0	0.0	0	1	0	0	0	0	1	1	0	0	0	0	0
WN	55	BHF	0	0	0.0	0	0.0	4	7.0	0.0	0.0	0	0	0	0	0	2	0	0	2	0	0	0	0
WN	71	BSD	0	0	0.0	1	0.5	5	0.0	0.0	0.0	1	2	0	3	3	0	0	3	6	0	3	1	2
WN	77	BSD	0	0	0.0	0	0.0	3	14.5	0.0	0.0	0	0	0	2	0	0	0	0	0	0	0	0	3
WN	85	BSD	0	0	0.0	0	0.0	2	35.0	0.0	0.0	0	0	0	0	0	1	0	0	4	0	0	0	0
WS	6	BHF	0	0	0.0	0	0.0	4	35.0	0.0	0.0	0	0	0	0	2	0	0	0	2	0	6	0	2
WS	8	BHF	0	0	0.0	0	7.0	2	50.0	0.0	2.5	0	1	0	0	0	0	1	0	3	0	0	2	0
WS	13	BSD	0	0	2.5	0	2.5	5	35.0	7.0	0.0	1	3	0	0	0	0	0	2	5	0	1	1	3
WS	18	BHF	0	0	0.0	0	7.0	4	35.0	0.0	7.0	0	1	0	0	0	1	0	0	3	0	0	0	2
WS	32	BHF	0	1	0.5	0	2.5	2	14.5	0.0	2.5	0	0	0	4	3	1	0	9	18	6	7	2	15
WS	92	BHF	0	0	0.0	0	2.5	7	35.0	0.0	2.5	0	1	0	0	0	0	2	5	1	1	1	0	1
WS	96	BHF	0	0	0.0	0	0.0	5	14.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WS	98	BHF	0	0	0.0	0	0.0	3	7.0	0.0	0.0	0	0	0	0	0	0	2	0	1	0	0	1	0
WS	102	BHF	0	0	0.0	0	2.5	3	14.5	0.0	2.5	1	1	0	0	0	0	0	6	3	0	0	4	1
WS	106	BHF	0	0	0.0	0	0.0	3	14.5	0.0	7.0	0	1	0	0	0	1	1	6	12	0	0	3	1
WS	110	BHF	0	0	0.0	0	2.5	4	2.5	0.0	0.5	0	0	0	0	0	0	0	1	4	0	0	0	0
WS	144	BHF	0	0	0.0	0	0.0	3	14.5	0.0	0.0	0	0	0	0	0	0	0	1	3	0	0	0	2
WS	148	BHF	0	0	0.5	0	0.0	3	7.0	0.0	0.0	0	0	0	0	0	0	0	2	4	0	0	1	1
WS	168	BSD	0	0	0.0	0	0.0	4	14.5	2.5	0.0	0	0	0	0	0	0	3	3	12	0	0	0	1

LOW DENSITY SUB-AREA 1 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
EN	3	BHF	0	0	0.0	0	0.0	1	50.0	0.0	0.0	0	0	0	7	0	0	1	6	4	0	1	3	0
EN	7	BHF	0	0	0.0	0	14.5	0	50.0	0.0	0.0	0	0	0	2	0	0	1	1	7	0	8	2	6
EN	15	BHF	0	0	0.0	0	7.0	0	35.0	0.0	2.5	0	0	0	0	0	0	0	3	1	0	1	2	0
EN	19	BHF	0	0	0.0	0	14.5	1	35.0	0.0	2.5	0	0	0	0	0	0	0	2	5	0	0	1	0
EN	24	BHF	0	0	0.0	1	7.0	0	35.0	0.0	0.5	0	0	0	0	0	0	1	0	0	0	0	0	0
EN	34	BHF	0	0	0.0	0	2.5	1	50.0	0.0	2.5	0	0	0	0	0	0	0	0	2	0	0	0	0
EN	43	BHF	0	0	0.0	0	0.0	1	35.0	0.0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
EN	56	BHF	0	0	0.0	0	0.0	0	50.0	0.0	2.5	0	0	0	0	0	0	0	1	0	0	0	0	0
EN	64	BHF	0	1	0.0	0	0.0	1	35.0	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	0
ES	86	WTB	0	0	0.0	0	0.0	0	35.0	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	0
ES	89	BHF	0	0	0.5	0	0.0	1	35.0	0.0	0.0	0	0	0	0	0	0	0	0	2	0	0	0	0
IN	6	BLF	0	2	0.0	0	0.0	0	35.0	0.0	0.0	1	0	0	0	0	3	1	3	5	0	0	4	1
IN	22	BLF	0	0	0.0	0	0.0	1	35.0	0.0	0.0	0	2	0	1	0	1	1	8	10	0	0	2	0
WN	0	BHF	0	2	0.0	2	0.0	1	50.0	0.0	0.0	0	0	0	0	1	0	0	2	2	0	0	2	1
WN	4	BSD	0	0	0.0	1	0.0	0	50.0	2.5	0.0	0	0	0	0	0	0	0	0	0	1	0	0	0
WN	9	BSD	0	0	0.0	0	7.0	1	35.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WN	15	BSD	0	0	0.0	0	0.0	0	35.0	0.0	0.0	0	1	0	0	0	0	1	5	11	0	0	16	3
WN	23	BSD	0	0	0.0	0	0.0	0	35.0	0.5	0.0	0	0	0	0	0	0	0	0	1	0	0	1	0
WN	27	BSD	0	0	0.0	0	0.0	1	35.0	0.0	0.0	0	0	0	0	0	0	0	1	4	0	0	0	0
WN	87	BSD	0	0	0.5	0	0.0	1	35.0	2.5	0.0	0	2	0	0	1	1	0	1	3	0	0	0	0
WN	91	BSD	0	0	0.0	0	0.0	1	35.0	0.0	0.0	0	6	0	0	0	1	3	0	2	0	0	1	2
WS	2	BHF	0	0	0.0	1	2.5	0	50.0	0.0	0.0	2	1	0	1	0	1	0	1	4	0	0	7	4
WS	4	BHF	0	0	0.0	0	2.5	1	35.0	0.0	0.0	0	0	0	0	0	0	0	2	1	0	0	4	0
WS	10	BHF	0	0	7.0	0	7.0	1	35.0	0.0	14.5	1	5	1	2	1	0	2	6	10	1	10	5	8
WS	15	BSD	0	0	2.5	0	7.0	1	14.5	7.0	0.0	2	2	0	1	1	4	2	2	6	1	31	3	8
WS	22	BHF	0	0	0.0	0	2.5	1	35.0	0.0	2.5	0	1	0	0	0	0	0	0	1	1	1	0	0
WS	27	BSD	0	0	0.0	0	2.5	1	35.0	50.0	0.0	1	0	0	0	0	1	0	0	5	1	3	2	10
WS	29	BSD	0	0	2.5	0	2.5	0	35.0	50.0	0.0	0	2	0	0	0	1	0	3	9	2	1	3	10
WS	63	BSD	0	0	0.5	0	0.0	0	35.0	0.5	0.0	0	0	0	0	0	1	0	2	4	0	0	3	2
WS	78	BSD	0	0	0.0	0	35.0	1	35.0	14.5	0.0	2	1	0	0	2	0	0	1	3	0	0	5	7
WS	80	BSD	0	0	0.0	0	0.0	0	35.0	7.0	0.0	0	0	0	0	0	0	0	1	3	0	0	1	1
WS	82	BSD	0	0	0.0	0	0.0	0	35.0	0.5	0.0	0	0	0	0	0	0	0	0	0	0	0	3	0

LOW DENSITY SUB-AREA 2 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
EN	11	BHF	0	0	0.0	0	7.0	1	14.5	0.0	0.5	0	0	0	0	0	0	0	0	1	2	2	0	1
EN	13	BHF	0	0	0.0	0	2.5	1	14.5	0.0	2.5	0	0	0	0	0	1	0	2	6	2	4	0	1
EN	36	BHF	0	0	0.0	0	.5	1	14.5	0.0	0.5	0	0	0	0	0	0	0	1	0	0	0	0	0
EN	66	BHF	0	0	0.0	0	0.5	1	7.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	70	WTB	0	0	0.0	0	0.0	1	0.5	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	2	0
ES	78	WTB	0	0	0.0	0	0.0	1	14.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	176	BHG	0	0	0.0	0	0.0	1	14.5	0.0	0.0	0	0	0	0	0	0	1	0	0	0	0	1	0
ES	202	BHG	0	0	0.0	0	0.0	1	7.0	0.0	0.0	0	0	0	0	0	1	0	1	1	0	0	0	0

LOW DENSITY SUB-AREA 2 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
ES	235	BHG	0	0	0.0	0	0.0	1	0.5	0.0	0.0	3	0	0	0	0	1	0	0	6	0	0	2	0
ES	269	BHG	0	0	0.0	0	2.5	1	14.5	0.0	0.0	0	0	0	0	0	0	1	0	0	0	0	1	2
IC	0	BLF	0	1	0.0	0	0.0	1	14.5	0.0	0.0	1	5	0	0	0	0	4	0	2	0	0	9	0
IC	3	BAF	0	1	0.0	0	0.5	1	7.0	0.0	2.5	2	6	0	0	0	0	0	0	1	0	0	2	0
ID	0	BLF	0	0	0.0	0	0.5	1	2.5	0.0	0.0	0	1	0	0	0	0	0	0	0	0	0	0	1
ID	11	BLF	0	0	0.5	0	0.5	1	2.5	0.0	0.0	0	1	0	0	1	0	0	0	0	0	0	0	0
ID	38	BLF	0	0	0.0	0	0.5	2	7.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	1
ID	40	BLF	0	0	0.0	0	0.0	1	7.0	0.0	0.0	0	2	0	0	1	0	0	0	0	0	0	0	0
ID	44	BLF	0	0	0.0	0	0.0	1	2.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	1
IE	4	BAF	0	0	0.0	0	0.0	2	2.5	0.0	2.5	0	1	0	0	0	0	0	0	0	0	0	0	0
IN	16	BLF	0	0	0.0	0	7.0	1	14.5	0.0	0.0	0	1	0	0	0	0	4	1	1	0	0	1	0
IN	18	BLF	0	0	0.0	0	0.0	2	14.5	0.0	0.0	0	1	0	0	0	1	3	1	2	0	0	1	1
IN	20	BLF	0	0	0.0	0	0.0	1	14.5	0.0	0.0	0	0	0	0	0	0	0	1	1	0	0	0	1
IT	81	BAF	0	1	0.0	0	0.0	1	2.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	52	BLF	0	1	0.0	0	2.5	1	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	68	BAF	0	0	0.0	0	2.5	2	7.0	0.0	0.0	1	0	0	0	0	0	0	0	0	0	0	1	0
IW	72	BLF	0	0	0.0	0	7.0	2	7.0	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	2	0
IW	74	BLF	0	0	0.0	0	2.5	1	2.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	2	0
WN	31	BSD	0	0	0.5	0	0.5	1	14.5	2.5	0.0	0	0	0	0	0	0	0	0	0	0	1	0	0
WN	37	BSD	0	0	0.0	0	0.5	2	7.0	0.0	0.0	0	1	0	0	0	0	0	0	1	0	0	0	0
WN	41	BSD	0	0	0.0	0	0.0	2	7.0	0.5	0.0	1	2	0	0	1	0	0	4	0	0	0	2	1
WN	53	BHF	0	0	0.0	0	0.0	2	7.0	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	0
WN	58	BSD	0	0	0.0	0	0.5	2	7.0	0.0	0.0	0	0	0	1	0	0	0	0	1	0	0	1	0
WN	60	BSD	0	0	0.0	0	0.0	2	2.5	0.5	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WN	62	BSD	0	0	0.0	0	0.0	1	7.0	0.5	0.0	1	0	0	0	0	1	0	4	2	1	0	0	0
WN	64	BSD	0	0	0.0	1	0.0	1	7.0	2.5	0.0	0	1	0	0	1	0	0	2	0	1	0	4	0
WN	67	BSD	0	0	0.0	0	2.5	1	7.0	2.5	0.0	0	0	0	0	0	0	0	1	2	0	0	0	0
WN	73	BSD	0	0	0.0	0	0.0	2	7.0	0.0	0.0	0	3	0	0	0	0	0	0	5	0	0	2	0
WN	75	BSD	0	0	0.0	0	0.0	2	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WN	83	BSD	0	0	0.5	0	0.0	1	14.5	2.5	0.0	0	0	0	0	0	0	0	1	0	0	1	1	1
WN	93	BSD	0	0	0.0	0	0.0	1	14.5	0.0	0.0	1	1	0	0	0	2	0	1	0	0	0	0	0
WS	24	BHF	0	0	0.0	0	2.5	1	0.5	0.0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
WS	25	BSD	0	0	0.0	0	2.5	2	7.0	0.0	0.0	0	0	0	0	0	2	2	2	4	0	0	0	0
WS	34	BHF	0	0	0.0	0	0.5	1	14.5	0.0	7.0	0	0	0	0	1	1	0	2	10	0	0	1	2
WS	57	BSD	0	0	0.0	0	0.0	1	14.5	0.5	0.0	0	0	0	0	0	0	0	0	1	0	0	0	0
WS	59	BSD	0	0	0.0	0	0.0	2	14.5	0.5	0.0	0	0	0	0	0	0	0	0	0	0	0	0	2
WS	61	BSD	0	0	0.0	0	0.0	2	14.5	0.0	0.0	0	0	0	0	0	0	0	1	1	0	0	2	3
WS	74	BSD	0	0	0.0	1	0.0	1	14.5	14.5	0.0	2	0	0	0	1	0	0	0	3	0	3	0	1
WS	76	BSD	0	0	0.0	0	0.0	1	14.5	7.0	0.0	0	0	0	0	0	1	0	0	3	0	0	0	1
WS	84	BHF	0	0	0.0	0	0.5	2	14.5	0.0	7.0	0	0	0	0	0	2	0	0	0	0	0	1	0
WS	100	BHF	0	0	0.5	0	0.0	1	7.0	0.0	2.5	1	0	0	1	0	2	3	1	0	0	0	0	1
WS	104	BHF	0	0	0.0	0	0.0	1	2.5	0.0	0.5	0	0	0	0	0	2	3	4	8	0	0	2	0
WS	108	BHF	0	1	0.0	0	0.0	2	7.0	0.0	0.0	0	0	0	0	0	0	2	4	6	1	0	2	1
WS	130	BHF	0	0	0.0	0	0.0	1	14.5	0.0	0.0	0	0	0	0	0	0	0	0	2	0	0	0	0
WS	132	BHF	0	1	0.0	0	0.0	2	14.5	0.0	0.0	0	0	0	0	0	0	0	0	2	0	1	0	0
WS	138	BHF	0	0	0.0	0	0.0	1	7.0	0.0	0.0	0	0	0	0	0	0	0	0	3	0	0	0	0
WS	140	BHF	0	0	0.0	1	0.5	1	7.0	0.0	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0
WS	142	BHF	0	0	0.0	0	0.0	1	14.5	0.0	0.0	0	0	0	0	0	1	1	3	4	0	0	1	1
WS	150	BHF	0	0	0.0	0	0.0	1	14.5	0.0	0.0	0	0	0	0	0	1	0	5	9	0	0	0	2
WS	156	BHF	0	0	0.0	0	0.0	1	2.5	0.0	0.0	1	0	0	0	0	0	0	1	9	0	0	1	0
WS	170	BSD	0	0	0.0	0	0.0	1	14.5	0.0	0.0	0	0	0	0	0	0	0	2	3	0	0	0	0

LOW DENSITY SUB-AREA 3 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
EN	0	WTB	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
EN	2	WTB	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	0	4	0	0	0	0
EN	9	BHF	0	0	0.5	0	14.5	0	14.5	0.0	2.5	0	0	0	0	0	0	1	0	0	1	7	1	1
EN	17	BHF	0	0	0.0	0	14.5	0	14.5	0.0	2.5	0	0	0	0	0	0	0	3	2	0	0	2	0
EN	26	BHF	0	0	0.0	0	2.5	0	14.5	0.0	2.5	0	0	0	0	0	0	1	0	0	0	0	1	0
EN	28	BHF	0	0	0.0	0	0.0	0	7.0	0.0	0.5	0	0	0	0	0	0	0	0	0	0	0	2	0
EN	30	BHF	0	0	0.0	0	0.0	0	14.5	0.0	0.5	0	0	0	0	0	0	0	1	3	0	0	0	0
EN	39	BHF	0	0	0.0	0	0.0	0	14.5	0.0	0.5	0	0	0	0	0	0	0	0	1	0	0	0	0
EN	41	BHF	0	0	0.0	0	0.0	0	14.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
EN	58	BHF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
EN	60	BHF	0	0	0.0	0	0.5	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
EN	62	BHF	0	0	0.0	0	0.0	0	0.5	0.0	2.5	0	0	0	0	0	0	0	0	1	0	0	0	0
EN	68	BHF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
EN	70	BHF	0	0	0.0	0	0.0	0	0.0	0.0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
EN	76	BHF	0	0	0.0	0	7.0	0	7.0	0.0	7.0	0	0	0	0	0	0	0	0	0	0	0	0	0
EN	78	BHF	0	0	0.0	0	14.5	0	14.5	0.0	14.5	0	0	0	0	0	0	0	1	1	0	0	0	8
EN	80	BHF	0	0	0.0	0	7.0	0	2.5	0.0	7.0	0	0	0	0	0	0	0	0	0	0	0	0	0
EN	82	BHF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
EN	83	BHF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
EN	95	WTB	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	2	WTB	0	0	0.0	0	0.0	0	7.0	0.0	0.5	1	0	0	0	0	1	4	1	3	0	0	3	0
ES	4	WTB	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	1	2	4	0	0	3	0
ES	6	WTB	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	1	0	0	0	4	2
ES	8	WTB	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	1	0	0	1	0	0	3	2
ES	10	WTB	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	1	0	2	2	0	0	1	1
ES	12	WTB	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	2	0	1	2	0	0	3	0
ES	14	WTB	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	1	0	1	8	0	0	0	0
ES	16	WTB	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	0	0	2	2	0	0	0	0
ES	18	WTB	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	2	0	3	4	0	0	4	0
ES	20	WTB	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	2	0
ES	22	WTB	0	1	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	2	2	0	0	0	0
ES	24	WTB	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	26	WTB	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	2	2	0	0	1	1
ES	28	WTB	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	3	1
ES	32	WTB	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	1	0
ES	72	WTB	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	1	0
ES	74	WTB	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	76	WTB	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	1	2	0	0	2	0
ES	83	WTB	0	0	0.5	1	7.0	0	14.5	0.0	7.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	157	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	159	BHG	0	0	0.0	0	0.5	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	164	BHG	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	166	BHG	0	0	0.0	0	7.0	0	14.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	1	0
ES	168	BHG	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	170	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0

LOW DENSITY SUB-AREA 3 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
ES	172	BHG	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	174	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	182	BHG	0	0	0.0	0	0.5	0	14.5	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	0
ES	184	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	186	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	1	0	0	0	0	0	0	0	0	0	0	0
ES	188	BHG	0	0	0.0	0	0.5	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	190	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	192	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	0
ES	194	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	196	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	198	BHG	0	0	0.5	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	1	0	0	0	0	0	0	0
ES	200	BHG	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	0	2	0	0	0	1
ES	205	BHG	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	207	BHG	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	3	0	0	0	0
ES	209	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	211	BHG	0	0	0.0	0	0.0	0	14.5	0.0	0.0	0	0	0	0	0	0	0	1	3	0	0	2	0
ES	213	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	215	BHG	0	0	0.0	0	0.0	0	14.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	217	BHG	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	1
ES	219	BHG	0	0	0.0	0	0.0	0	14.5	0.0	0.0	1	0	0	0	0	0	1	3	1	0	0	3	0
ES	221	BHG	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	223	BHG	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	1	0	1	3	0	0	1	1
ES	225	BHG	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	2	3	0	0	1	0
ES	227	BHG	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	1	0
ES	229	BHG	0	0	0.0	0	0.0	0	0.5	0.0	0.0	1	0	0	0	0	0	0	1	1	0	0	0	1
ES	233	BHG	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	1	1	0	0	0	0
ES	237	BHG	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	0	2	0	0	2	2
ES	239	BHG	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	1	5	0	0	2	1
ES	244	BHG	0	0	0.0	0	0.0	0	2.5	0.0	0.0	1	0	0	0	0	1	0	2	16	0	0	2	0
ES	246	BHG	0	0	0.0	0	0.0	0	2.5	0.0	0.0	1	0	0	0	0	0	0	0	6	0	0	1	0
ES	251	BHG	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	1	3	0	0	1	1
ES	253	BHG	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	1	1	0	0	0	2	0
ES	255	BHG	0	0	0.0	0	0.0	0	7.0	0.0	0.0	1	0	0	0	0	0	0	0	1	0	0	1	0
ES	257	BHG	0	0	0.0	0	0.0	0	14.5	0.0	0.0	0	0	0	0	0	0	0	1	1	0	0	0	1
ES	259	BHG	0	0	0.0	0	0.0	0	7.0	0.0	0.5	0	0	0	0	1	0	0	1	1	0	0	1	1
ES	261	BHG	0	1	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	0	0	0	2	0	0	1	0
ES	263	BHG	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	2	0	0	0	0	0	0	0	0
ES	265	BHG	0	0	0.0	0	0.0	0	14.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	267	BHG	0	0	0.0	0	0.0	0	7.0	0.0	0.5	0	0	0	0	0	0	0	1	1	0	0	0	0
ES	271	BHG	0	0	0.0	0	0.0	0	14.5	0.0	0.5	0	0	0	0	0	0	0	0	0	0	0	1	0
ES	273	BHG	0	0	0.5	0	0.0	0	14.5	0.0	0.5	0	0	0	0	1	0	1	0	0	0	0	0	20
ES	275	BHG	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	1	0	0	0	2	1	0	0	0	1
ES	276	BHF	0	0	0.0	0	0.0	0	14.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IA	0	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IA	2	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0

LOW DENSITY SUB-AREA 3 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
IA	4	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IA	6	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IA	8	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IA	10	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IA	12	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IA	14	BLF	0	1	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IA	16	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IB	25	BLF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	1	0	0	0	0	1	0	0	0	0	1	0
IB	27	BLF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	1	0	0	0	0	0	0	1	0	0	2	0
IB	29	BLF	0	1	0.0	0	0.0	0	0.5	0.0	0.0	0	1	0	0	0	0	0	0	1	0	0	0	0
IB	31	BLF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	4	0
IB	33	BLF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IB	35	BLF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	1	0
IB	37	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IB	39	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IB	41	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IB	43	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	2	BLF	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	0	2	2	0	0	0	4	0
IC	9	BAF	0	0	0.0	0	0.0	0	2.5	0.0	0.5	0	3	0	0	0	1	0	0	1	0	0	1	0
IC	11	BAF	0	0	0.0	0	0.0	0	0.0	0.0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	13	BLF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	3	0	0	0	0	0	0	0	0	0	0	0
IC	15	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	17	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	19	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	21	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	23	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	25	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	27	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	29	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	31	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	33	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	35	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	37	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	39	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	41	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	43	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	45	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IC	47	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ID	2	BAF	0	0	0.0	0	0.0	0	14.5	0.0	2.5	0	1	0	0	0	1	0	0	0	0	0	0	0
ID	19	BLF	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ID	21	BLF	0	0	0.0	0	0.0	0	14.5	0.0	0.0	0	0	0	0	0	0	2	0	0	0	0	0	2
ID	42	BLF	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	1	0	0	0	0	0	1	0
ID	46	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ID	48	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ID	50	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0

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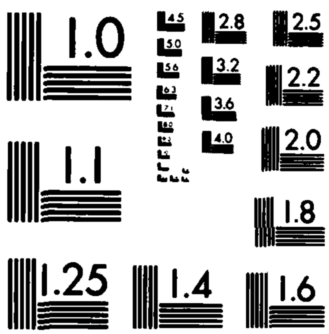

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

LOW DENSITY SUB-AREA 3 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
ID	52	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ID	54	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
ID	56	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IE	8	BLF	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	1	0	0	0	0	0	0	0	0	0	0	0
IE	10	BLF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	1	0	0	0	0	0	0	1	0	0	0	0
IE	12	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	2	0	0	0	0
IE	14	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	1	0	0	0	0	0	0
IE	16	BLF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IE	18	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IT	75	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IT	77	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IT	79	BAF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IT	83	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IT	85	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IT	87	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IT	89	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IT	91	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	0	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	2	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	4	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	6	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	8	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	10	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	12	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	14	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	16	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	18	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	32	BAF	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	4	0
IW	34	BAF	0	0	0.0	0	0.0	0	14.5	0.0	0.5	1	0	0	0	0	0	0	1	2	0	0	0	0
IW	36	BAF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	2	0	0	0	0	0
IW	38	BAF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	40	BAF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	1	0
IW	42	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	44	BLF	0	0	0.0	0	2.5	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	0
IW	46	BLF	0	0	0.0	0	2.5	0	0.5	0.0	0.0	0	0	0	0	0	0	0	1	0	0	0	0	0
IW	48	BLF	0	0	0.0	0	2.5	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	2	0
IW	50	BLF	0	0	0.0	0	2.5	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
IW	54	BLF	0	0	0.0	0	2.5	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	1	1
IW	62	BAF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	1	0
IW	64	BAF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	2	0
IW	66	BAF	0	1	0.0	0	2.5	0	0.0	0.0	0.0	0	0	0	0	0	0	1	0	0	0	0	0	0
IW	70	BLF	0	0	0.0	0	14.5	0	2.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	1	0
IW	76	BLF	0	1	0.0	0	2.5	0	2.5	0.0	0.0	0	0	0	0	0	0	0	1	1	0	0	1	0
IW	78	BLF	0	0	0.0	0	2.5	0	2.5	0.0	0.0	0	0	0	0	0	0	0	0	2	0	0	1	0
IW	80	BLF	0	0	0.0	0	2.5	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	0

LOW DENSITY SUB-AREA 3 - CASE MEMBERSHIP

LOC	BLOCK	LAND	PSF	NGS	SCBO	SCF	SCSH	RHF	BFCR	DFCR	HFCR	PKC	BTC	GRND	CMMT	NMT	BCB	UCB	BCS	UCS	CCORE	CFLK	NCC	NFLK
IW	82	BLF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WN	19	BSD	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WN	25	BSD	0	0	0.5	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WN	29	BSD	0	0	0.0	0	0.0	0	14.5	0.0	0.0	0	0	0	0	0	1	0	0	6	0	0	0	1
WN	33	BSD	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WN	35	BSD	0	0	0.0	0	0.0	0	0.5	7.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	3
WN	39	BSD	0	0	0.5	0	0.5	0	7.0	0.0	0.0	1	1	1	0	0	1	0	7	6	0	0	2	0
WN	45	BSD	0	0	0.0	0	0.0	0	7.0	0.5	0.0	0	1	0	0	0	4	0	2	1	0	0	0	0
WN	47	BSD	0	0	0.0	0	14.5	0	14.5	0.0	0.0	0	0	0	0	0	1	1	2	5	0	0	1	0
WN	50	BSD	0	0	0.0	0	0.0	0	0.5	0.5	0.0	0	0	0	0	0	0	0	0	4	0	0	0	0
WN	69	BSD	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	1	1	0	1	0	0
WN	89	BSD	0	0	0.0	0	0.0	0	14.5	2.5	0.0	1	1	0	0	0	2	2	2	4	0	0	3	0
WS	16	BHF	0	0	0.0	0	2.5	0	7.0	0.0	7.0	2	0	0	0	0	0	2	2	4	0	2	0	8
WS	46	BSD	0	0	0.0	0	0.0	0	2.5	0.0	0.0	2	0	0	0	0	0	0	2	2	0	0	0	2
WS	48	BSD	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	0	1	1	1	0	0	1	1
WS	50	BSD	0	0	0.0	0	0.0	0	7.0	2.5	0.0	0	0	0	0	0	0	0	1	2	0	0	0	0
WS	52	BSD	0	0	0.5	0	0.0	0	14.5	0.5	0.0	1	0	0	0	0	0	0	0	1	1	2	0	0
WS	54	BSD	0	0	0.0	0	2.5	0	14.5	0.5	0.0	0	0	0	0	0	0	0	0	0	0	0	1	0
WS	67	BSD	0	0	0.0	0	0.0	0	14.5	0.5	0.0	0	0	0	0	0	0	0	3	4	0	1	1	1
WS	70	BSD	0	0	0.0	0	0.0	0	14.5	2.5	0.0	1	1	0	0	0	0	0	1	1	0	0	0	1
WS	72	BSD	0	0	0.0	0	0.5	0	14.5	0.0	0.0	0	1	0	0	0	0	0	1	0	0	0	2	0
WS	86	BHF	0	0	0.0	1	2.5	0	14.5	0.0	2.5	0	0	0	0	1	1	0	2	0	0	0	0	1
WS	94	BHF	0	0	0.0	0	0.0	0	14.5	0.0	0.5	0	0	0	0	0	0	1	0	0	0	0	0	0
WS	112	BHF	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	0	2	0	0	0	2
WS	114	BHF	0	0	0.5	0	0.5	0	2.5	0.0	2.5	0	0	0	0	0	0	0	1	0	0	0	0	0
WS	116	BHF	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	1	0	0	0	0	0	0	1	0	0	0	1
WS	118	BHF	0	0	0.0	0	0.0	0	7.0	0.0	2.5	0	0	0	0	0	2	0	0	4	0	0	0	0
WS	122	BHF	0	0	0.0	0	0.0	0	2.5	0.0	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0
WS	124	BHF	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	2	0	0	0	0	1
WS	126	BHF	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	1	0	0	1	0	2	0	0
WS	128	BHF	0	0	0.0	0	2.5	0	7.0	0.0	7.0	0	0	0	0	0	0	0	0	0	0	0	1	0
WS	136	BHF	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	0	0	1	0	0	0	0	0
WS	146	BHF	0	0	0.0	0	0.0	0	14.5	0.0	0.0	0	0	0	0	0	0	1	1	7	0	0	0	0
WS	154	BHF	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	1	1	3	0	0	0	0
WS	161	BHF	0	0	0.5	0	0.5	0	0.5	0.0	2.5	0	0	0	0	0	0	1	0	9	1	1	2	0
WS	163	BHF	0	0	0.0	0	0.0	0	7.0	0.0	0.0	0	0	0	0	0	0	1	0	0	0	0	0	0
WS	172	BHF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WS	177	BHF	0	0	0.0	0	0.0	0	14.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WS	203	BHF	0	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	0
WS	205	BHF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WS	207	BHF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
WS	209	BHF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	1
WS	211	BHF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	1	0	1	0	0	0	0
WS	213	BHF	0	0	0.0	0	0.0	0	2.5	0.0	0.0	0	0	0	0	0	0	0	1	1	0	0	0	0
WS	216	BHF	0	0	0.0	0	0.0	0	14.5	0.0	0.0	0	0	0	0	0	0	0	3	1	0	0	1	1
WS	218	BHF	0	0	0.0	0	0.0	0	0.5	0.0	0.0	0	0	0	0	0	0	0	0	1	0	0	0	1

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